

<110> Gregory J. Hinkle
Jingdong Liu
Linda T. Parker

<120> Novel Plant Transcribed Regions and Uses Thereof

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<151> 2000-08-29

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Arg Phe Asp Leu Pro Glu Gly Val Ala Ile Glu Lys Glu
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  Ala Val Ala Ala Ser Ala Ser Thr Ala Gly Phe Leu Leu Arg Gly Ala
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Tyr	Ser	Ser	Ser	Ser	Phe	Gly	Leu	Ser	Gly	Ala	Ser	Tyr	Ile	Ser	Ser		
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Leu	Gln	Arg	Lys	Ala	Val	Arg	Asp	Leu	Lys	Thr	Ser	Leu	Ser	Gly	Glu		

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Asp	Leu	Ala	Leu	Gln	Ile	Ile	Cys	Lys	Ile	Ser	Ser	Asp	Asn	Asp	Ile	
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Cys	Val	Ser	Ser	Ile	Ser	Asp	His	Leu	Asp	Thr	Gly	Ser	His	Ser	Glu	
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Pro Ser Pro Pro Thr Val Glu Pro Ser Pro Ser Ser Pro Ala Pro Pro	
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Pro Ser Ser Leu Glu Ala Ile Ala Ala Glu Ala Met Ser Phe Asp Glu	
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 Asp Asp Thr Glu Glu Ser Ile Asp Val Lys Val Gln Lys Ala Leu Asp
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 Cys Pro Cys Val Ala Asp Leu Lys Asn Gly Pro Cys Gly Gly Gln Phe
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 Val Asp Ala Phe Ser Cys Phe Leu Arg Ser Arg Glu Glu Glu Lys Gly
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 Ser Asp Cys Val Lys Pro Phe Ile Thr Leu Gln Asp Cys Ile Lys Ala
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 Asn Pro Glu Ala Phe Ser Lys Glu Ile Leu Glu Glu Glu Glu Asn Asp
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gag gag gca gat aag tcc aac ctg aaa gtt aga gct cca tca tgg tcc 554
 Glu Glu Ala Asp Lys Ser Asn Leu Lys Val Arg Ala Pro Ser Trp Ser
 130 135 140

aga gaa tcc aaa cct aag gtt tga gattgcttgg tattaactga tagtgatatt 608
 Arg Glu Ser Lys Pro Lys Val
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Leu Pro Ser Thr Ser Ser Ala Ser Ser Thr Thr Thr Val Ser Ser Thr
15 20 25

gcg tcc tcc ggc gcg ccg ccg ccg agc cgc ccg gac tgg atg ctc ttc 147
Ala Ser Ser Gly Ala Pro Pro Pro Ser Arg Pro Asp Trp Met Leu Phe
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Gly Thr Ser Ser Pro Phe Pro Asp Pro Glu Met Gln Ala Ser Ser Arg
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Ser Ala Leu Arg Leu Phe Pro Val Arg Glu Pro Pro Lys Ile Leu Asp

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ccg acc ggc agc ggc gac cac cac aga gaa tcc aac gag gca agg gca Pro Thr Gly Ser Gly Asp His His Arg Glu Ser Asn Glu Ala Arg Ala 130 135 140			433
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cac ccg gtg gtg cag cct ggg gtc agc taa cctttgcact gaccataatg His Pro Val Val Gln Pro Gly Val Ser 210 215			675
atcctataca gggatgaagg aattagcttc ttctgcttct gcttctgctt cagtggtcga			735
ttccttaggg atgacttgcc agcttgcttct aaacatgcag ctagtggttaa gttctggatt			795
tagatagtaa taagtaatgg ggtgtccacc gtctaataac gtcattgggat actaaagggt			855
tttattctgg gagatgtgac aaaccgcaaa ctctttgggt aggggtcggt cggaactgtc			915
ctgttcgtct gttttatcct gataccgggt ctgtgttggt tatgtacata atgaagtagt			975
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ctacc

1040

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tctttttctc cgcccaca atg ggt aaa gct aaa aag gga cca aag ttt gct 171
 Met Gly Lys Ala Lys Lys Gly Pro Lys Phe Ala
 1 5 10

gtt atg aag aag att gtc act tcc aaa gca atc aaa agc tac aaa gaa 219
 Val Met Lys Lys Ile Val Thr Ser Lys Ala Ile Lys Ser Tyr Lys Glu
 15 20 25

gag gtt ttg aac cca gaa aag aag aat ctt atg aag gaa aag tta ccc 267
 Glu Val Leu Asn Pro Glu Lys Lys Asn Leu Met Lys Glu Lys Leu Pro
 30 35 40

aga aat gtt cca act cat tct tca gcg ctt ttc ttt caa tac aac act 315
 Arg Asn Val Pro Thr His Ser Ser Ala Leu Phe Phe Gln Tyr Asn Thr
 45 50 55

gca ctg gga ccc cct tat cgt gtt ttg gtg gac acc aac ttc atc aat 363
 Ala Leu Gly Pro Pro Tyr Arg Val Leu Val Asp Thr Asn Phe Ile Asn
 60 65 70 75

ttc tcg atc caa aat aaa ttg gat ctg gag aaa ggg atg atg gac tgc 411
 Phe Ser Ile Gln Asn Lys Leu Asp Leu Glu Lys Gly Met Met Asp Cys
 80 85 90

tta tat gca aaa tgc acc cct tgt att acg gac tgt gtg atg gca gaa 459
 Leu Tyr Ala Lys Cys Thr Pro Cys Ile Thr Asp Cys Val Met Ala Glu
 95 100 105

ctc gag aag tta ggc caa aaa tat cgt gta gct cta agg att gcc aag 507
 Leu Glu Lys Leu Gly Gln Lys Tyr Arg Val Ala Leu Arg Ile Ala Lys
 110 115 120

gat cct cga ttt gag aga ata cta tgt act cat aaa ggg acc tat gct 555
 Asp Pro Arg Phe Glu Arg Ile Leu Cys Thr His Lys Gly Thr Tyr Ala
 125 130 135

gat gac tgc ctt gtt gag aga gtt act cag cac aag tgc tac att gtt 603
 Asp Asp Cys Leu Val Glu Arg Val Thr Gln His Lys Cys Tyr Ile Val

140	145	150	155	
gca aca tgt gat cgg gac ttg aag agg aga att cgg aag att ccc ggt				651
Ala Thr Cys Asp Arg Asp Leu Lys Arg Arg Ile Arg Lys Ile Pro Gly				
	160	165	170	
gtt cca ata atg tac atc acc aaa cgc aag tac tcg att gag cga ttg				699
Val Pro Ile Met Tyr Ile Thr Lys Arg Lys Tyr Ser Ile Glu Arg Leu				
	175	180	185	
cct gaa gca aca att ggt gga gct cca aga att tga tgcagtaaaa				745
Pro Glu Ala Thr Ile Gly Gly Ala Pro Arg Ile				
	190	195		
ctaaaacagg cagagctggc tataacaata atattgatac taatttcttg gtcgtgaagt				805
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cggaagcttg agacttgaac aaaagcagca cttcaatggt ttatacctga aattttctta				925
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gtatcatggt aaaccttgga gagtgtctga actatgatga cattttcata gttctgggct				1045
tgtggcaatt aactctcttg aaacgatact ttttttgttg caagagaaaa accttatttt				1105
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aacaagacca caccacacc atg agc gtc atc gac att ctc acc aga gtt gat				172
	Met Ser Val Ile Asp Ile Leu Thr Arg Val Asp			
	1	5	10	
tcc att tgc aaa aag tac gac aaa tac gac gtc caa agc caa agg gac				220
Ser Ile Cys Lys Lys Tyr Asp Lys Tyr Asp Val Gln Ser Gln Arg Asp				
	15	20	25	
tcc aat ctc tcc tcc gac gat gca ttc gcc aaa ctc tac gcc tcc gtc				268
Ser Asn Leu Ser Ser Asp Asp Ala Phe Ala Lys Leu Tyr Ala Ser Val				
	30	35	40	
gac gcc gac att gag gcc tta ctt cag aaa gca gat acc gct tcc aag				316

Asp	Ala	Asp	Ile	Glu	Ala	Leu	Leu	Gln	Lys	Ala	Asp	Thr	Ala	Ser	Lys		
45						50					55						
gag	aaa	agt	aag	gca	tcc	act	gtg	gcg	atc	aat	gcc	gag	att	cgt	cga		364
Glu	Lys	Ser	Lys	Ala	Ser	Thr	Val	Ala	Ile	Asn	Ala	Glu	Ile	Arg	Arg		
60					65					70					75		
acc	aag	gct	agg	ttg	ttg	gag	gag	gtt	ccc	aag	ttg	cag	aaa	ttg	gct		412
Thr	Lys	Ala	Arg	Leu	Leu	Glu	Glu	Val	Pro	Lys	Leu	Gln	Lys	Leu	Ala		
				80					85					90			
atg	aaa	aag	gta	aag	ggg	ctt	tca	tca	caa	gaa	ttt	gct	gcc	cgt	aat		460
Met	Lys	Lys	Val	Lys	Gly	Leu	Ser	Ser	Gln	Glu	Phe	Ala	Ala	Arg	Asn		
			95					100					105				
gat	ttg	gct	ctt	gca	ttg	ccg	gat	agg	att	caa	gct	atc	cca	gat	ggg		508
Asp	Leu	Ala	Leu	Ala	Leu	Pro	Asp	Arg	Ile	Gln	Ala	Ile	Pro	Asp	Gly		
		110					115					120					
acc	cct	gca	gca	tcc	aaa	caa	act	gga	agt	tgg	gca	gct	tca	gcc	tca		556
Thr	Pro	Ala	Ala	Ser	Lys	Gln	Thr	Gly	Ser	Trp	Ala	Ala	Ser	Ala	Ser		
	125					130					135						
cgt	cct	gga	att	aaa	ttt	gat	aca	gat	ggg	aaa	ttc	gat	gat	gaa	tac		604
Arg	Pro	Gly	Ile	Lys	Phe	Asp	Thr	Asp	Gly	Lys	Phe	Asp	Asp	Glu	Tyr		
140					145					150					155		
ttc	caa	caa	act	gaa	gaa	tca	agt	gga	ttc	agg	aaa	gag	tac	gaa	atg		652
Phe	Gln	Gln	Thr	Glu	Glu	Ser	Ser	Gly	Phe	Arg	Lys	Glu	Tyr	Glu	Met		
				160					165					170			
cgt	aaa	atg	aaa	cag	gat	caa	ggg	ttg	gat	atg	atc	gca	gaa	gga	ttg		700
Arg	Lys	Met	Lys	Gln	Asp	Gln	Gly	Leu	Asp	Met	Ile	Ala	Glu	Gly	Leu		
			175				180						185				
gat	act	ttg	aaa	aac	atg	gca	cat	gat	atg	aat	gag	gaa	ctg	gat	aga		748
Asp	Thr	Leu	Lys	Asn	Met	Ala	His	Asp	Met	Asn	Glu	Glu	Leu	Asp	Arg		
		190					195					200					
caa	gtt	cca	ctg	atg	gac	gag	att	gat	act	aag	gtg	gac	agg	gca	tct		796
Gln	Val	Pro	Leu	Met	Asp	Glu	Ile	Asp	Thr	Lys	Val	Asp	Arg	Ala	Ser		
	205					210					215						
tct	gac	ctt	aaa	aat	acc	aat	gtt	aga	ctt	aga	gat	aca	gtg	aac	cag		844
Ser	Asp	Leu	Lys	Asn	Thr	Asn	Val	Arg	Leu	Arg	Asp	Thr	Val	Asn	Gln		
220					225					230					235		
ctt	cga	tcc	agt	cga	aac	ttt	tgt	att	gat	att	gtt	ttg	ttg	att	ata		892
Leu	Arg	Ser	Ser	Arg	Asn	Phe	Cys	Ile	Asp	Ile	Val	Leu	Leu	Ile	Ile		
				240					245					250			
att	ttg	gga	att	gct	gct	tat	ttg	tac	aac	gtg	cta	aag	aaa	tga			937
Ile	Leu	Gly	Ile	Ala	Ala	Tyr	Leu	Tyr	Asn	Val	Leu	Lys	Lys				
			255				260						265				
tacggcatag	aagaccatta	gatcaatttg	tatggcttat	cagtatttct	tgtattttct												997

tggtaatatc gtggtgtgac tcgtgtctgc ttcttttttaa aacaatattt ttggacttgt 1057
 tcctgcaact tgagagatgc acttgtcctt tatcaacaga tctatatgtc gccgtattat 1117
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 aggat 1182

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tat ggt gtg ttg ctg cag tta cca gct cct cag ctt gag aat gcc ttg 97
 Tyr Gly Val Leu Leu Gln Leu Pro Ala Pro Gln Leu Glu Asn Ala Leu
 20 25 30

agt aag aac ccg aca ctg aag acg ccc ttg gct gag cat gcc gag cag 145
 Ser Lys Asn Pro Thr Leu Lys Thr Pro Leu Ala Glu His Ala Glu Gln
 35 40 45

cca aat att cgg tcg aca ctt cca agg tct acc ttg gtg gtt ctg ggt 193
 Pro Asn Ile Arg Ser Thr Leu Pro Arg Ser Thr Leu Val Val Leu Gly
 50 55 60

ctt gct gaa gat caa cca cag caa cca gca gta aca cag gtg cag agc 241
 Leu Ala Glu Asp Gln Pro Gln Gln Pro Ala Val Thr Gln Val Gln Ser
 65 70 75 80

agc caa aac cag gct gcg gaa acc agt agc tct gct gct gat acg gct 289
 Ser Gln Asn Gln Ala Ala Glu Thr Ser Ser Ser Ala Ala Asp Thr Ala
 85 90 95

aca gaa gta act cag gaa tct tct ggt gct agc taa catcttttat 335
 Thr Glu Val Thr Gln Glu Ser Ser Gly Ala Ser
 100 105

gccgaaatgg gctaattgctt gcaggttgta tgccatctat cattttcatc tctggagtga 395

tgttggtgat tgatgaaatg ggctaacgct tgcaggttgt gtaccatctg tctctgaggg 455

tctaagatgt gtttttctgt gtgatgcgtc tcattggacg ggtgtagct gctgcatctg 515

gacgcctaaa tgagaactaa gttatttagt tgctgggggt aattctaatt ttcggtggtg 575

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654

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gaa ccc gcg aag ctg ctg ttg cca tac ctt caa cgc gcc gat gaa ttg 96
 Glu Pro Ala Lys Leu Leu Leu Pro Tyr Leu Gln Arg Ala Asp Glu Leu
 20 25 30

caa aag cat gaa cca ctc gtc gct tat tac tgt cga tta tat gca atg 144
 Gln Lys His Glu Pro Leu Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met
 35 40 45

gaa cgg ggg ttg aag att ccg caa agt gag cgc acg aag acc act aat 192
 Glu Arg Gly Leu Lys Ile Pro Gln Ser Glu Arg Thr Lys Thr Thr Asn
 50 55 60

gct ctt ctg gtt tcg ctc atg aag cag ctt gaa aag gat aaa aag tca 240
 Ala Leu Leu Val Ser Leu Met Lys Gln Leu Glu Lys Asp Lys Lys Ser
 65 70 75 80

atc cag ttg ggg cct gaa gac aat tta tat ctc gag gga ttt gct ttg 288
 Ile Gln Leu Gly Pro Glu Asp Asn Leu Tyr Leu Glu Gly Phe Ala Leu
 85 90 95

aat gtg ttt gga aaa gca gac aag caa gat cgt gct gga aga gca gat 336
 Asn Val Phe Gly Lys Ala Asp Lys Gln Asp Arg Ala Gly Arg Ala Asp
 100 105 110

ttg act aca gca aaa aca ttt tat gct gcc agt atc ttt ttt gag att 384
 Leu Thr Thr Ala Lys Thr Phe Tyr Ala Ala Ser Ile Phe Phe Glu Ile
 115 120 125

ctt aat caa ttt gga gca gtt cag cct gat ctg gag cag aaa caa aaa 432
 Leu Asn Gln Phe Gly Ala Val Gln Pro Asp Leu Glu Gln Lys Gln Lys
 130 135 140

tat gct gtg tgg aaa gca gct gaa ata aga aaa gct ttg aaa gaa gga 480
 Tyr Ala Val Trp Lys Ala Ala Glu Ile Arg Lys Ala Leu Lys Glu Gly
 145 150 155 160

agg aag ccc aca gct ggc ccc cct gat ggt gat gag gat ctg tca gtt 528
 Arg Lys Pro Thr Ala Gly Pro Pro Asp Gly Asp Glu Asp Leu Ser Val

165					170					175						
cct	ttg	agt	tct	tca	agt	gat	aga	tat	gac	ctt	ggg	act	act	gaa	aat	576
Pro	Leu	Ser	Ser	Ser	Ser	Asp	Arg	Tyr	Asp	Leu	Gly	Thr	Thr	Glu	Asn	
			180					185					190			
act	gtt	tcc	agt	cct	gga	cca	gaa	tct	gat	tca	tca	aga	agt	tat	cat	624
Thr	Val	Ser	Ser	Pro	Gly	Pro	Glu	Ser	Asp	Ser	Ser	Arg	Ser	Tyr	His	
		195					200					205				
aac	cct	gct	aac	tac	cag	aat	ctg	cca	agc	att	cat	cct	gct	gct	cct	672
Asn	Pro	Ala	Asn	Tyr	Gln	Asn	Leu	Pro	Ser	Ile	His	Pro	Ala	Ala	Pro	
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aaa	ttt	cat	gat	act	gtt	aac	gac	caa	cat	tct	gct	aat	att	cca	tca	720
Lys	Phe	His	Asp	Thr	Val	Asn	Asp	Gln	His	Ser	Ala	Asn	Ile	Pro	Ser	
225					230					235					240	
tct	atg	cca	ttt	cat	gat	aga	gta	gat	aat	aac	aag	cat	tct	tcc	gtt	768
Ser	Met	Pro	Phe	His	Asp	Arg	Val	Asp	Asn	Asn	Lys	His	Ser	Ser	Val	
				245					250					255		
gtt	tct	cca	tca	tct	cac	tct	ttc	aca	cct	gga	gtt	tat	cct	tcc	caa	816
Val	Ser	Pro	Ser	Ser	His	Ser	Phe	Thr	Pro	Gly	Val	Tyr	Pro	Ser	Gln	
			260					265					270			
gac	tac	cat	tct	cct	cca	cct	tcc	cga	gac	tat	cat	tct	cct	cca	cca	864
Asp	Tyr	His	Ser	Pro	Pro	Pro	Ser	Arg	Asp	Tyr	His	Ser	Pro	Pro	Pro	
		275					280					285				
tcc	caa	gac	tat	cat	tct	cct	cca	tcg	tcc	caa	gat	tat	cat	cct	cct	912
Ser	Gln	Asp	Tyr	His	Ser	Pro	Pro	Ser	Ser	Gln	Asp	Tyr	His	Pro	Pro	
	290					295					300					
cca	cca	tcc	caa	gat	tac	cat	cct	cca	ccg	tcc	caa	gat	tac	cat	cct	960
Pro	Pro	Ser	Gln	Asp	Tyr	His	Pro	Pro	Pro	Ser	Gln	Asp	Tyr	His	Pro	
305					310					315					320	
cca	cct	gct	aga	tct	gaa	ggt	tct	tat	tct	gag	ctc	tac	aat	cat	cag	1008
Pro	Pro	Ala	Arg	Ser	Glu	Gly	Ser	Tyr	Ser	Glu	Leu	Tyr	Asn	His	Gln	
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caa	tac	tca	cca	gag	aat	tca	cag	cat	tta	ggt	cct	aac	tac	cct	tct	1056
Gln	Tyr	Ser	Pro	Glu	Asn	Ser	Gln	His	Leu	Gly	Pro	Asn	Tyr	Pro	Ser	
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cat	gaa	act	tcc	tct	tat	tct	tat	ccc	cat	ttt	cag	tct	tat	cca	agt	1104
His	Glu	Thr	Ser	Ser	Tyr	Ser	Tyr	Pro	His	Phe	Gln	Ser	Tyr	Pro	Ser	
		355					360					365				
ttt	aca	gaa	agc	agc	ctt	cca	tca	gtc	cca	tca	aac	tat	act	cat	tat	1152
Phe	Thr	Glu	Ser	Ser	Leu	Pro	Ser	Val	Pro	Ser	Asn	Tyr	Thr	His	Tyr	
		370				375					380					
caa	gga	tca	gat	gtt	tca	tat	tct	tcc	cag	tcg	gct	ccg	cta	act	aca	1200
Gln	Gly	Ser	Asp	Val	Ser	Tyr	Ser	Ser	Gln	Ser	Ala	Pro	Leu	Thr	Thr	
385					390					395					400	

aac cat tca tca agt gct caa cac agt agc aga aat gaa act gtg gaa	1248
Asn His Ser Ser Ser Ala Gln His Ser Ser Arg Asn Glu Thr Val Glu	
405 410 415	
cct aag cca aca act act cag gca tac cag tac gac agt aac tac cag	1296
Pro Lys Pro Thr Thr Thr Gln Ala Tyr Gln Tyr Asp Ser Asn Tyr Gln	
420 425 430	
cca gca cct gaa aaa ata gca gag gca cac aag gct gca aga ttt gcc	1344
Pro Ala Pro Glu Lys Ile Ala Glu Ala His Lys Ala Ala Arg Phe Ala	
435 440 445	
gtt ggg gca ctg gca ttt gat gat gtc tca gtt gca gta gac ttc ttg	1392
Val Gly Ala Leu Ala Phe Asp Asp Val Ser Val Ala Val Asp Phe Leu	
450 455 460	
aag aaa tca ctt gag ttg ctg aca aat cca tca gct ggc cag taa	1437
Lys Lys Ser Leu Glu Leu Leu Thr Asn Pro Ser Ala Gly Gln	
465 470 475	
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ccgtacgcgt cgtctcctgc tgtttctccc catccctttc ctgcctcggc ttgcaccttc	180
aaccttactt aaagctctga cctcaaactg aaagggacct gcgaagagtt ttttttgcg	240
cagtaca atg gag gta ttt ggc aaa tct gtg att gct gag ccc agc aat	289
Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn	
1 5 10	
gtg att ttc ttg tcc gcg atc ctt aac aca gaa ggg tca aac cct agt	337
Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser	
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cac aag tgt gac aag agg tgc cag agc gag cgc att ttg ggg aac atg	385
His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met	

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 taggtgcgtc acacgccggg gccggtcgcg gtcaccggac cggacgcaca ggggcgccgt 180
 acgtgcagtc atcggcc atg aag gtc ctc gtc ctc gcc gtg ctg gcg ctc 230
 Met Lys Val Leu Val Leu Ala Val Leu Ala Leu
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 gtc gcc gcc gcc tcc gcc gct ggt cag ggc gag gag ggg ggc ggg ccg 278
 Val Ala Ala Ala Ser Ala Ala Gly Gln Gly Glu Glu Gly Gly Gly Pro
 15 20 25
 ccg ctg ccg ttc gcg ttg ggc gcg gcg ccg gcg ggc tgc gac gtc gcg 326
 Pro Leu Pro Phe Ala Leu Gly Ala Ala Pro Ala Gly Cys Asp Val Ala
 30 35 40
 cag ggc gag tgg gtg cgc gac gac gac gcc cgc cca tgg tac cag gaa 374
 Gln Gly Glu Trp Val Arg Asp Asp Asp Ala Arg Pro Trp Tyr Gln Glu
 45 50 55
 tgg gag tgc ccc tac atc cag ccg cag ctg acg tgc cag gcg cac ggc 422
 Trp Glu Cys Pro Tyr Ile Gln Pro Gln Leu Thr Cys Gln Ala His Gly
 60 65 70 75
 cgc ccc gac aag gcg tac cag agc tgg cgc tgg cag ccg cgg ggc tgc 470
 Arg Pro Asp Lys Ala Tyr Gln Ser Trp Arg Trp Gln Pro Arg Gly Cys
 80 85 90
 tcg ctg ccc agc ttc aac gcg acg ctg atg ctg gag atg ctg cgg ggg 518
 Ser Leu Pro Ser Phe Asn Ala Thr Leu Met Leu Glu Met Leu Arg Gly
 95 100 105
 aag cgg atg ctg ttc gtg ggt gac tcg ctg aac cgg ggg cag tac gtg 566
 Lys Arg Met Leu Phe Val Gly Asp Ser Leu Asn Arg Gly Gln Tyr Val
 110 115 120

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ttc gag acg gtg gac tcg ctg agc gtc ttc cgg gcg aag aac tac gac Phe Glu Thr Val Asp Ser Leu Ser Val Phe Arg Ala Lys Asn Tyr Asp 140 145 150 155	662
gcc acc atc gag ttc tac tgg gcg ccg atg ctg gcc gag tcc aac tcc Ala Thr Ile Glu Phe Tyr Trp Ala Pro Met Leu Ala Glu Ser Asn Ser 160 165 170	710
gac gac gcc gtg gtg cac tcc gcc gac gac cgc ctc atc cgc ggc gcg Asp Asp Ala Val Val His Ser Ala Asp Asp Arg Leu Ile Arg Gly Ala 175 180 185	758
ccc atg gac agg cac tac agc ttc tgg aag ggc gcc gac gtc ctc gtc Pro Met Asp Arg His Tyr Ser Phe Trp Lys Gly Ala Asp Val Leu Val 190 195 200	806
ttc aac tcc tac ctc tgg tgg gtc gcc ggg gac aaa atc cag atc ctg Phe Asn Ser Tyr Leu Trp Trp Val Ala Gly Asp Lys Ile Gln Ile Leu 205 210 215	854
agg ggc gcc gac aac gac ccg agc aag gac atc gtg gag atg aag tcg Arg Gly Ala Asp Asn Asp Pro Ser Lys Asp Ile Val Glu Met Lys Ser 220 225 230 235	902
gag gag gcc tac cgg ctg gtg ctg cac cag gtg gtc cgg tgg ctg gag Glu Glu Ala Tyr Arg Leu Val Leu His Gln Val Val Arg Trp Leu Glu 240 245 250	950
cgc aac gtg gac ccc ggc aag tca cgg gtg ttc ttc gtc acc gct tcg Arg Asn Val Asp Pro Gly Lys Ser Arg Val Phe Phe Val Thr Ala Ser 255 260 265	998
ccg acg cac acg gac ggc aga gcg tgg ggc gac gac gac gcg gag ggc Pro Thr His Thr Asp Gly Arg Ala Trp Gly Asp Asp Asp Ala Glu Gly 270 275 280	1046
agc agc aac tgc tac aac cag acg tcg ccg atc agc gcc gcc tcg tcc Ser Ser Asn Cys Tyr Asn Gln Thr Ser Pro Ile Ser Ala Ala Ser Ser 285 290 295	1094
tac cgt ggc ggc acg agc cgg gag atg ctg cgc gca acg gag gag gtg Tyr Arg Gly Gly Thr Ser Arg Glu Met Leu Arg Ala Thr Glu Glu Val 300 305 310 315	1142
ctg gcc acg tcg cgg gtg ccc gtc ggg ctg gtc aac atc acg cgg ctg Leu Ala Thr Ser Arg Val Pro Val Gly Leu Val Asn Ile Thr Arg Leu 320 325 330	1190
tcc gag tac cgc cgg gac gcg cac acg cag acc tac aag aag cag tgg Ser Glu Tyr Arg Arg Asp Ala His Thr Gln Thr Tyr Lys Lys Gln Trp 335 340 345	1238

gtg gag ccg acg gcc gag cag cgc gcc gac ccc agg agc tac gcc gac	1286
Val Glu Pro Thr Ala Glu Gln Arg Ala Asp Pro Arg Ser Tyr Ala Asp	
350 355 360	
tgc acg cac tgg tgc ctc ccc ggc gtg ccg gac acg tgg aac gag ctg	1334
Cys Thr His Trp Cys Leu Pro Gly Val Pro Asp Thr Trp Asn Glu Leu	
365 370 375	
ctc tac tgg aag ctc ttc ttc ccc agc aac gat cag gtc ctc tga	1379
Leu Tyr Trp Lys Leu Phe Phe Pro Ser Asn Asp Gln Val Leu	
380 385 390	
tggtgaattg gtgcctgcat acatacgcct ggaaaccaac tgctaggggc tagcccaaag	1439
aaaatgtgtc tagatgaaca aagacatggg gttcaaattgt tttgttttga tttcggatat	1499
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 <212> DNA
 <213> Zea mays
 <220>
 <221> CDS
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Thr Arg Pro Cys Asn Ser Met Asn Met Gln Leu Ser Gln Leu Pro	
1 5 10 15	
tta gat tgt aaa agg ctg act tat gat gct ctt gaa gga gct aac gtc	95
Leu Asp Cys Lys Arg Leu Thr Tyr Asp Ala Leu Glu Gly Ala Asn Val	
20 25 30	
act ccg acg tcc ttt tac aac att ggt gat ctt gag att caa gat aat	143
Thr Pro Thr Ser Phe Tyr Asn Ile Gly Asp Leu Glu Ile Gln Asp Asn	
35 40 45	
cta gca cga gta tgg gta gac att ggt att cat gag cca ttg ctt ctg	191
Leu Ala Arg Val Trp Val Asp Ile Gly Ile His Glu Pro Leu Leu Leu	
50 55 60	
gac atc ctg ctt aat gcc tta aca aca ata agt tca gat cat gtt ggt	239
Asp Ile Leu Leu Asn Ala Leu Thr Thr Ile Ser Ser Asp His Val Gly	
65 70 75	
att aag caa gta cag ttt gga ggg tca gag ttt ttg aac tgg agc gag	287
Ile Lys Gln Val Gln Phe Gly Gly Ser Glu Phe Leu Asn Trp Ser Glu	
80 85 90 95	
gac ttg aag aca gaa gaa gtt gga tat agt gtg tgc aaa atc taa	332
Asp Leu Lys Thr Glu Glu Val Gly Tyr Ser Val Cys Lys Ile	
100 105	

atagcacaat cccgagatTT gcagaagcag ctacCTTTTT agCTaaacgc aaatgcaaca 392
 tctggTtcga agctagggtt ttaaccacct tgatcctgca aacgagaaga agaaaatggt 452
 gacaacacga tgaaaaattg acgtccaaac atattaactt ctgcttgaaa agaggTtgcc 512
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 tgtaataata taatataact agattatctg atgtccaacg tgtattgact ctacttaggg 632
 ctgaacataa tacttatggc tcgttagttc gcttggctcg acttagttta tttcaatttt 692
 gttacgagct aagttagtat tttagctcgg tttgttaacg agccatctcg ttagctcaaa 752
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 <212> DNA
 <213> Glycine max

<220>
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 cgG tcg gcg agg ccc gcg gtt cgG gcg agg gaa ccg gcc ggt ccg gtt 97
 Arg Ser Ala Arg Pro Ala Val Arg Ala Arg Glu Pro Ala Gly Pro Val
 20 25 30
 cag gtt acg atc ccg aaa ccc aaa gcg gcg gag gcg gaa ggc gcg aac 145
 Gln Val Thr Ile Pro Lys Pro Lys Ala Ala Glu Ala Glu Gly Ala Asn
 35 40 45
 atc gtt ttg cag ccg cgG ttg tgc act ctg aga tcc tac ggt tcg gat 193
 Ile Val Leu Gln Pro Arg Leu Cys Thr Leu Arg Ser Tyr Gly Ser Asp
 50 55 60
 cga gcg ggg gtt ctg atc aag gcc cgC aag gag ggt gac gat gat gac 241
 Arg Ala Gly Val Leu Ile Lys Ala Arg Lys Glu Gly Asp Asp Asp Asp
 65 70 75 80
 gtg tcc ccc ttc ttc gcc gct ctt tcc gac tat att gag agc tct aag 289
 Val Ser Pro Phe Phe Ala Ala Leu Ser Asp Tyr Ile Glu Ser Ser Lys
 85 90 95
 aaa agt cat gat ttt gag atc atc tct ggt cgT cta gct atg atg gtg 337
 Lys Ser His Asp Phe Glu Ile Ile Ser Gly Arg Leu Ala Met Met Val

100	105	110	
ttt gca gcg acg gtg aca atg gaa atg gtg aca gga aac tct atg ttc			385
Phe Ala Ala Thr Val Thr Met Glu Met Val Thr Gly Asn Ser Met Phe			
115	120	125	
aga aag atg gac att gaa gga atc aca gag gct ggt ggg gtg tgt ttg			433
Arg Lys Met Asp Ile Glu Gly Ile Thr Glu Ala Gly Gly Val Cys Leu			
130	135	140	
ggt gca gta act tgt gca gca ctc ttt gca tgg ttc tcc agt gct cga			481
Gly Ala Val Thr Cys Ala Ala Leu Phe Ala Trp Phe Ser Ser Ala Arg			
145	150	155	160
aac aga gtt ggt cga atc ttc acc gtc agc tgc aac gca ttc atc gat			529
Asn Arg Val Gly Arg Ile Phe Thr Val Ser Cys Asn Ala Phe Ile Asp			
	165	170	175
tcc gta att gac caa atc gta gat ggt ttg ttc tat gaa ggc gac gac			577
Ser Val Ile Asp Gln Ile Val Asp Gly Leu Phe Tyr Glu Gly Asp Asp			
	180	185	190
cct act gat tgg ccc gat gaa ccg tga tcaaataac cattcctacc			624
Pro Thr Asp Trp Pro Asp Glu Pro			
195	200		
attttacaca ctttgcagat ttaatgtgtc taaaaacccat agacacagtt agactaagat			684
gtaatatata ataatatata gaaatatata agcagaggaa gaatactaaa agtgatgtca			744
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acctaaatgg attatgtaaa gtgt			828
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Pro Arg Val Arg Cys Pro Thr Thr Leu Lys Arg Ile Cys Arg Gln His			
1	5	10	15
gga att aat cgt tgg cca tca cgg aag att aag aaa gtt ggg cac tcc			96
Gly Ile Asn Arg Trp Pro Ser Arg Lys Ile Lys Lys Val Gly His Ser			
20	25	30	
ctg aag aaa ttg caa atg gtg atc gat tca gta cat ggt agc gaa gga			144
Leu Lys Lys Leu Gln Met Val Ile Asp Ser Val His Gly Ser Glu Gly			
35	40	45	

acg gtt cag ctc agc tcg ctc tat gaa aac ttt acc aag acc aca tgg	192
Thr Val Gln Leu Ser Ser Leu Tyr Glu Asn Phe Thr Lys Thr Thr Trp	
50 55 60	
tca gaa aga gag tta caa ggg gat gcc act tat cca ttg tca gag gaa	240
Ser Glu Arg Glu Leu Gln Gly Asp Ala Thr Tyr Pro Leu Ser Glu Glu	
65 70 75 80	
aaa ggt ccc ttg gaa cct tct gtt cct gat cgg tat tgc gag ggc aga	288
Lys Gly Pro Leu Glu Pro Ser Val Pro Asp Arg Tyr Cys Glu Gly Arg	
85 90 95	
ttc acc tcg cat act tct ggt tct aat tcc ctc tca ccc tct tgt agc	336
Phe Thr Ser His Thr Ser Gly Ser Asn Ser Leu Ser Pro Ser Cys Ser	
100 105 110	
caa agc tca aat tcc agc cat ggt tgt tcc agt ggt tcg aaa tca caa	384
Gln Ser Ser Asn Ser Ser His Gly Cys Ser Ser Gly Ser Lys Ser Gln	
115 120 125	
caa cat gtc agt gct cct caa ctt gca gta aag aaa gaa gtt ttc atg	432
Gln His Val Ser Ala Pro Gln Leu Ala Val Lys Lys Glu Val Phe Met	
130 135 140	
gag gag aat cag agc tcc aca cta ctc aaa gct gca agc cat gct gaa	480
Glu Glu Asn Gln Ser Ser Thr Leu Leu Lys Ala Ala Ser His Ala Glu	
145 150 155 160	
ctg cag atg ctt cct gaa gaa aga ctt gtc acc ctg cct agg tct cat	528
Leu Gln Met Leu Pro Glu Glu Arg Leu Val Thr Leu Pro Arg Ser His	
165 170 175	
agc caa gtg ctt tta agt gaa caa aag cca gtg gaa aat ata aca ggt	576
Ser Gln Val Leu Leu Ser Glu Gln Lys Pro Val Glu Asn Ile Thr Gly	
180 185 190	
atg caa atg tct aag cct gat tct ctc aag ata aaa gcc atg tac ggc	624
Met Gln Met Ser Lys Pro Asp Ser Leu Lys Ile Lys Ala Met Tyr Gly	
195 200 205	
gaa gaa aga tgt ata ttc cga ctg cag cct agt tgg gga ttt gaa aag	672
Glu Glu Arg Cys Ile Phe Arg Leu Gln Pro Ser Trp Gly Phe Glu Lys	
210 215 220	
cta aaa gaa gaa att cta aag cgg ttt ggc att gct cgg gag gtg tat	720
Leu Lys Glu Glu Ile Leu Lys Arg Phe Gly Ile Ala Arg Glu Val Tyr	
225 230 235 240	
gtg gac ctc aag tat ttg gat gat gaa tct gag tgg gtt ctt cta aca	768
Val Asp Leu Lys Tyr Leu Asp Asp Glu Ser Glu Trp Val Leu Leu Thr	
245 250 255	
tgc aac gca gac ctg ctt gag tgt att gat gtg tac aag tca tca agt	816
Cys Asn Ala Asp Leu Leu Glu Cys Ile Asp Val Tyr Lys Ser Ser Ser	
260 265 270	

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act caa aca gta agg atc ttg gta cat tct agt gac cag taa      858
Thr Gln Thr Val Arg Ile Leu Val His Ser Ser Asp Gln
      275              280              285

gtgcctgttc ctttgggtcaa actgggtttgt cctgacaatg gcgcaaagct catcaggatg  918
ctgaagaaaag catacaatct ctctttgaag taaagtgctt gttgacatcg cgctcagttt  978
caagtcataa tcatatatgc aaaagcagca tctgtaaata cctacactcg tgttgtcatc 1038
ccgtgggtcaa gtgcctagta agttctgtat gttgctgttt ggtggctgtg tggcagaatt 1098
ggagagaaaag tgattgttgg tgttccctgt cagctcttgg gattggtttg tatgcagtaa 1158
gctgcataca gtctttgata taacagaaga tgggacttct gtacctctag ttcagtttgt 1218
taacagtaca ggtagttcgt tgaatgtaac aaactagtgt acaatattgt aggccggagg 1278
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<212>      DNA
<213>      Zea mays

<220>
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<222>      (640) .. (987)

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ggtggtcggc gagggacgag agggccatcc acctcgctcc gctgctcacc ttcctctgct  180
tcctcctgct cttectctgc tcccacgacc cgtccccgcg cgatatgtcg agcttcgctg  240
gaggcggcgg cggaggagga ggagcgagat ctgggaaccg gaggttaagg atgctttagt  300
gtgcgtatta cctacccatt ggagtattat tatccgogat gcggatgttg tacttgtcca  360
gcagtaacca agtatgggac caaagtatgt caccatacaa aacactcttg ctgtggtaat  420
actaccaacc tacatcagca tgttcctgat taccatttga gctggattcg aaatacctgg  480
caaaaaaaaa aaaaaaaaaa gggcggccgc tcgcgatttt cagcgcctcc aggetccggc  540
caactcgcag ccagtctcca cagcgaacg aacctcgagt cctcgacaag cacccaaatc  600
gacgaattct tccccctct ccatctcga cgcgcaccg atg cgg gcg atg tcg      654

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Met Arg Ala Met Ser
1 5

tcg gcg gtt aat ggt atg ctg cgg gca cgg ctg cgc ggg gca gcg cgc 702
Ser Ala Val Asn Gly Met Leu Arg Ala Arg Leu Arg Gly Ala Ala Arg
10 15 20

gtt cgc ggc ggc ggc ggc gag ggg gcc ggg cgg tgg acg acc cca ggt 750
Val Arg Gly Gly Gly Gly Glu Gly Ala Gly Arg Trp Thr Thr Pro Gly
25 30 35

cac gag gag cgc ccc aag ggg tac ctc ttc aac cgg ccg ccg ccg cct 798
His Glu Glu Arg Pro Lys Gly Tyr Leu Phe Asn Arg Pro Pro Pro Pro
40 45 50

ccg ggg gaa tct cgc aag tgg gag gat tgg gag ctg ccc tgc tac gtg 846
Pro Gly Glu Ser Arg Lys Trp Glu Asp Trp Glu Leu Pro Cys Tyr Val
55 60 65

acc tcc ttc ctc acc gtc gtc atc ctc ggc gtc ggc ctc aac gcg aag 894
Thr Ser Phe Leu Thr Val Val Ile Leu Gly Val Gly Leu Asn Ala Lys
70 75 80 85

ccc gac ctt aca atc gag acg tgg gcg cac cag aag gcg ctc gag cgc 942
Pro Asp Leu Thr Ile Glu Thr Trp Ala His Gln Lys Ala Leu Glu Arg
90 95 100

ctc cag cag cag gag ctc gcc gct gcc gac acc cag gcc gag tga 987
Leu Gln Gln Gln Glu Leu Ala Ala Ala Asp Thr Gln Ala Glu
105 110 115

tccgcgcgtc tcaggtcctc tcgaactctc ggctgcctct gatttggttc caataagatg 1047

gccacaatgt gcggtcctga atgttctgga cttctggtat tgatggaaca cgagctgaac 1107

actatgctgc tgttttttct gttctgtttt gaaatttgcc cggatgatgat ggcgaatgtc 1167

ctgaatattc tgaatatattt gaaatgtttg actgttgtat tatcatctta tccttccggt 1227

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<212> DNA
<213> Glycine max

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<222> (1) .. (507)

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gat tta aga agc ttt aag ctt ata ttg gaa tat att aaa gcc ttg cct				96
Asp Leu Arg Ser Phe Lys Leu Ile Leu Glu Tyr Ile Lys Ala Leu Pro	20	25	30	
act ggg caa gaa acc gat ttt gta tta gtt tca tgt tct gga cta gga				144
Thr Gly Gln Glu Thr Asp Phe Val Leu Val Ser Cys Ser Gly Leu Gly	35	40	45	
att gag cct tcc agg cgg gag cag gtt ctt aaa gcc aag agg gct ggt				192
Ile Glu Pro Ser Arg Arg Glu Gln Val Leu Lys Ala Lys Arg Ala Gly	50	55	60	
gaa gat tcc tta aga aga tct ggc ctt gga tac aca ata gtc cgt cct				240
Glu Asp Ser Leu Arg Arg Ser Gly Leu Gly Tyr Thr Ile Val Arg Pro	65	70	75	80
ggt cca ttg cag gaa gaa cct gga ggg cag cgt gct cta ata ttt gat				288
Gly Pro Leu Gln Glu Glu Pro Gly Gly Gln Arg Ala Leu Ile Phe Asp	85	90	95	
caa gga aac aga ata tca cag ggc atc agc tgt gct gat gta gct gat				336
Gln Gly Asn Arg Ile Ser Gln Gly Ile Ser Cys Ala Asp Val Ala Asp	100	105	110	
ata tgt gtg aag gca cta cat gat aca act gca aga aac aaa agc ttt				384
Ile Cys Val Lys Ala Leu His Asp Thr Thr Ala Arg Asn Lys Ser Phe	115	120	125	
gat gta tgt tac gag tat att gct gag gat gga agg gag ctt tat gag				432
Asp Val Cys Tyr Glu Tyr Ile Ala Glu Asp Gly Arg Glu Leu Tyr Glu	130	135	140	
ctg gtt gca cac ttg ccc gac aaa gca aat aac tac ttg aca cca gca				480
Leu Val Ala His Leu Pro Asp Lys Ala Asn Asn Tyr Leu Thr Pro Ala	145	150	155	160
ctc tct gtc tta gag aag aat acc tga tcatcccttg ttgagacaaa				527
Leu Ser Val Leu Glu Lys Asn Thr	165			
atacttccca gaagatttca taaatttgct acctacgttc ttctacttct gcattggatc				587
aatgcagaag tgattcatgt aactattttt cctgtatata tattcttgtg tagcacaaat				647
ctacgacttg agaaattaat ttatttataa attcttcctt tgaaaattgg aattatacaa				707
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 <212> DNA
 <213> Zea mays

<220>

<221> CDS
 <222> (219) .. (2390)

<400> 18

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gcagccccctt acatactctc tgcggactgc ggtccgcacc gcacgccatc tcagcaagac    180
gagagctcca ccgcgctggt cacttcttct gacgaagg atg gcg gga aaa gag gat    236
                               Met Ala Gly Lys Glu Asp
                               1                               5

gag aat gag aag cca tcg ttg gtg gca gcc ggc ggc aag caa gat cgg    284
Glu Asn Glu Lys Pro Ser Leu Val Ala Ala Gly Gly Lys Gln Asp Arg
                               10                               15                               20

aca gcg gcg acc acg gaa tcc ctt ccg caa agg acg aat ctt gag tgg    332
Thr Ala Ala Thr Thr Glu Ser Leu Pro Gln Arg Thr Asn Leu Glu Trp
                               25                               30                               35

gga aag gca gcg tgt agc gag gat gac atc cag aag tgt gta gct gcc    380
Gly Lys Ala Ala Cys Ser Glu Asp Asp Ile Gln Lys Cys Val Ala Ala
                               40                               45                               50

ggg gcc ttc cat ccc ggt gag ctg gtc gaa tgg cga gct ccc gtc aag    428
Gly Ala Phe His Pro Gly Glu Leu Val Glu Trp Arg Ala Pro Val Lys
                               55                               60                               65                               70

gat gag act ccg acg cta tcc acc atg gag gat cag ttt gtt atc ctg    476
Asp Glu Thr Pro Thr Leu Ser Thr Met Glu Asp Gln Phe Val Ile Leu
                               75                               80                               85

tct ctg acg cac ata att tgc ggt ctg agg gtc gat gcg agc gat ttc    524
Ser Leu Thr His Ile Ile Cys Gly Leu Arg Val Asp Ala Ser Asp Phe
                               90                               95                               100

ctg gtc agt gtg ctc gag tac tac aga ctt gag tgg tct cac ctg acg    572
Leu Val Ser Val Leu Glu Tyr Tyr Arg Leu Glu Trp Ser His Leu Thr
                               105                               110                               115

ccc aac tct att acg gcg ctg agc atc ttc gcc cac ctt tgt gag gcc    620
Pro Asn Ser Ile Thr Ala Leu Ser Ile Phe Ala His Leu Cys Glu Ala
                               120                               125                               130

tac gtg gag gcg cct cca act gtg gag gtc ttc acg cac ttc tac agc    668
Tyr Val Glu Ala Pro Pro Thr Val Glu Val Phe Thr His Phe Tyr Ser
                               135                               140                               145                               150

ctc tat cac aat agg aaa ggc gaa acg aca aca ctg ggc gcc gtc tac    716
Leu Tyr His Asn Arg Lys Gly Glu Thr Thr Thr Leu Gly Ala Val Tyr
                               155                               160                               165

ttc cgg ctc agg gac agg atg aag aag aat tat cca ttg tac tac ttg    764
Phe Arg Leu Arg Asp Arg Met Lys Lys Asn Tyr Pro Leu Tyr Tyr Leu

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			170				175				180							
agg	tcc	tcg	cag	ttc	atg	tgg	gtt	tct	ctg	tgg	ttc	tat	gcc	aag	gta	812		
Arg	Ser	Ser	Gln	Phe	Met	Trp	Val	Ser	Leu	Trp	Phe	Tyr	Ala	Lys	Val			
			185					190					195					
cca	aag	agc	tgt	cgc	ttg	acc	ttc	agg	ggg	gat	ata	cta	aag	gag	gaa	860		
Pro	Lys	Ser	Cys	Arg	Leu	Thr	Phe	Arg	Gly	Asp	Ile	Leu	Lys	Glu	Glu			
			200					205					210					
aac	aat	tgg	aat	tgg	aaa	gat	ctt	ttg	cct	ctt	tcc	tgt	gag	cag	atg	908		
Asn	Asn	Trp	Asn	Trp	Lys	Asp	Leu	Leu	Pro	Leu	Ser	Cys	Glu	Gln	Met			
			215					220					225		230			
aag	cag	gtc	ggc	caa	atc	atg	aag	cta	agt	aac	caa	ggc	ttg	act	ggg	956		
Lys	Gln	Val	Gly	Gln	Ile	Met	Lys	Leu	Ser	Asn	Gln	Gly	Leu	Thr	Gly			
			235					240						245				
gca	gac	atc	att	cat	gat	tac	ctc	aag	cgc	cgg	att	agc	cct	ttg	cgc	1004		
Ala	Asp	Ile	Ile	His	Asp	Tyr	Leu	Lys	Arg	Arg	Ile	Ser	Pro	Leu	Arg			
			250					255					260					
cga	agg	atg	cat	ttg	aca	tgc	aat	tat	tct	ggc	ctc	tca	gat	cct	acc	1052		
Arg	Arg	Met	His	Leu	Thr	Cys	Asn	Tyr	Ser	Gly	Leu	Ser	Asp	Pro	Thr			
			265					270					275					
agg	gat	tca	gac	aaa	gat	ctt	tct	gtg	gaa	gac	att	gag	agc	aag	ctg	1100		
Arg	Asp	Ser	Asp	Lys	Asp	Leu	Ser	Val	Glu	Asp	Ile	Glu	Ser	Lys	Leu			
			280					285					290					
agc	tac	ctt	cta	gat	ctt	aag	agg	atg	ggg	gtg	aag	cag	cct	aca	ggg	1148		
Ser	Tyr	Leu	Leu	Asp	Leu	Lys	Arg	Met	Gly	Val	Lys	Gln	Pro	Thr	Gly			
			295					300					305		310			
aga	ctg	gtc	aga	gca	tca	acc	aat	gac	caa	gcc	aat	cag	cct	cta	gac	1196		
Arg	Leu	Val	Arg	Ala	Ser	Thr	Asn	Asp	Gln	Ala	Asn	Gln	Pro	Leu	Asp			
			315					320						325				
ttg	ctg	aat	gtt	tgc	tca	act	cac	gaa	gct	aag	aag	gaa	gca	caa	cct	1244		
Leu	Leu	Asn	Val	Cys	Ser	Thr	His	Glu	Ala	Lys	Lys	Glu	Ala	Gln	Pro			
			330					335					340					
caa	gtt	tgt	gcc	tcc	cta	cga	aga	tac	aca	agg	caa	tct	gct	ggg	ccc	1292		
Gln	Val	Cys	Ala	Ser	Leu	Arg	Arg	Tyr	Thr	Arg	Gln	Ser	Ala	Gly	Pro			
			345					350					355					
agg	aag	gtt	gca	gta	cct	cca	cct	ctt	aaa	att	gac	cct	ccc	ccc	act	1340		
Arg	Lys	Val	Ala	Val	Pro	Pro	Pro	Leu	Lys	Ile	Asp	Pro	Pro	Pro	Thr			
			360					365					370					
caa	ggg	ccg	gcc	cca	gaa	gag	att	cta	gat	gcc	aca	aca	aac	ata	gcg	1388		
Gln	Gly	Pro	Ala	Pro	Glu	Glu	Ile	Leu	Asp	Ala	Thr	Thr	Asn	Ile	Ala			
			375					380					385		390			
act	gca	gtt	tct	cca	aac	ctg	ggc	gta	gaa	caa	aaa	tct	ata	gag	cac	1436		
Thr	Ala	Val	Ser	Pro	Asn	Leu	Gly	Val	Glu	Gln	Lys	Ser	Ile	Glu	His			
			395					400					405					

cct	act	gtg	gct	gaa	gag	cgg	aaa	ata	gca	gag	tta	gtg	aaa	cct	acg	1484
Pro	Thr	Val	Ala	Glu	Glu	Arg	Lys	Ile	Ala	Glu	Leu	Val	Lys	Pro	Thr	
			410					415					420			
ttt	tca	gtc	att	ggg	gcc	aaa	agg	aag	gca	tct	gcc	ccc	cgg	tct	cgt	1532
Phe	Ser	Val	Ile	Gly	Ala	Lys	Arg	Lys	Ala	Ser	Ala	Pro	Arg	Ser	Arg	
		425					430					435				
tca	aag	aga	aga	gca	aag	tat	tca	tta	ctt	tcc	gtt	gtt	aca	aag	acc	1580
Ser	Lys	Arg	Arg	Ala	Lys	Tyr	Ser	Leu	Leu	Ser	Val	Val	Thr	Lys	Thr	
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Arg	Met	Ser	Ser	Leu	Asp	Thr	Gly	Ser	Ile	Lys	Gly	Thr	Ser	Arg	Thr	
455					460					465					470	
aaa	gag	gca	gtg	tta	gcg	ctg	aat	tca	cgg	tca	ata	gga	ttg	gct	cga	1676
Lys	Glu	Ala	Val	Leu	Ala	Leu	Asn	Ser	Arg	Ser	Ile	Gly	Leu	Ala	Arg	
			475						480					485		
tgc	cct	cct	gcc	tct	tta	gca	gaa	ggg	aca	ggg	aac	ggg	gga	ctg	ttc	1724
Cys	Pro	Pro	Ala	Ser	Leu	Ala	Glu	Gly	Thr	Gly	Asn	Gly	Gly	Leu	Phe	
			490					495					500			
atg	ctt	gcc	aaa	gtt	gtt	gac	cat	act	aag	gtt	gtt	gag	gat	tcc	atg	1772
Met	Leu	Ala	Lys	Val	Val	Asp	His	Thr	Lys	Val	Val	Glu	Asp	Ser	Met	
		505					510					515				
tcg	aat	ata	ctc	ctt	aat	caa	caa	gtt	gga	gat	tct	tct	cgc	aag	gag	1820
Ser	Asn	Ile	Leu	Leu	Asn	Gln	Gln	Val	Gly	Asp	Ser	Ser	Arg	Lys	Glu	
	520					525					530					
gtt	gat	cct	gca	caa	tct	atc	act	gag	att	gtc	caa	gac	cag	gag	gcc	1868
Val	Asp	Pro	Ala	Gln	Ser	Ile	Thr	Glu	Ile	Val	Gln	Asp	Gln	Glu	Ala	
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Ile	Glu	Val	Ser	Ala	Ala	Ile	Pro	Val	Pro	Asn	Lys	Glu	Glu	Ile	Asn	
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agt	ggg	gtg	ata	tgg	gag	cgg	atg	cag	aaa	gtt	cag	agt	gaa	tac	gtg	1964
Ser	Gly	Val	Ile	Trp	Glu	Arg	Met	Gln	Lys	Val	Gln	Ser	Glu	Tyr	Val	
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Ser	Leu	Ser	Met	Thr	Ala	Ser	Ser	Glu	Leu	Leu	Glu	Gln	Ala	Lys	Lys	
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ctg	gtc	atg	gag	aat	aaa	cgc	ctg	aag	gac	gtg	cag	ata	atg	ctg	tcg	2060
Leu	Val	Met	Glu	Asn	Lys	Arg	Leu	Lys	Asp	Val	Gln	Ile	Met	Leu	Ser	
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caa	caa	gtg	aaa	gac	ctc	gaa	gac	ggc	aga	agg	ctc	tta	aca	gaa	agg	2108
Gln	Gln	Val	Lys	Asp	Leu	Glu	Asp	Gly	Arg	Arg	Leu	Leu	Thr	Glu	Arg	
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Met Lys Lys Ala Glu Gln Glu Thr Phe Lys Ile Ile Glu Glu Asn Met	
635 640 645	
aag ctc aaa gat gag aac aaa ggg cag aag cag atg atc gag gag ctg	2204
Lys Leu Lys Asp Glu Asn Lys Gly Gln Lys Gln Met Ile Glu Glu Leu	
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Ser Lys Gln Asn Glu Ser Thr Leu Gly Ala Leu Val His Lys Cys Thr	
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ctg ttg gac cgc tac aaa gag gag tct gct cag ctc att aga gag aag	2300
Leu Leu Asp Arg Tyr Lys Glu Glu Ser Ala Gln Leu Ile Arg Glu Lys	
680 685 690	
gaa gag ctg caa tcg cgt gtt tcg cgt gtc aat gat ctt gtc aag cta	2348
Glu Glu Leu Gln Ser Arg Val Ser Arg Val Asn Asp Leu Val Lys Leu	
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Val Ser Ser Thr Leu Cys Gln Glu Lys Asp Ser Ala Ser	
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ctgagttgac tgagtcttcg taactcgctc tctactgtct cagctactca tcgcattctc	180
tgcatttatc ctccgatcac attttctctc tcttcggttcg gg atg tcg gag aaa	234
Met Ser Glu Lys	
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gct ctt agg gat ctc aat aca att ctt gga act gaa agg aag aat gag	282
Ala Leu Arg Asp Leu Asn Thr Ile Leu Gly Thr Glu Arg Lys Asn Glu	
5 10 15 20	
gac tcc agt aag gca tgt tta tcc aag cct tct gtt gac aat gct gtt	330

Asp	Ser	Ser	Lys	Ala	Cys	Leu	Ser	Lys	Pro	Ser	Val	Asp	Asn	Ala	Val	
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gaa	aat	att	gaa	gaa	tgg	caa	aag	aaa	aat	aat	agt	ccc	tcc	ttg	gtt	378
Glu	Asn	Ile	Glu	Glu	Trp	Gln	Lys	Lys	Asn	Asn	Ser	Pro	Ser	Leu	Val	
			40					45					50			
tct	cca	gct	gtt	aat	gga	aat	ctg	gct	gtg	act	gct	aat	tct	ggg	gcg	426
Ser	Pro	Ala	Val	Asn	Gly	Asn	Leu	Ala	Val	Thr	Ala	Asn	Ser	Gly	Ala	
			55				60					65				
gag	gtt	gta	aat	cca	gaa	gta	gaa	tat	att	gaa	tct	gag	aac	ttg	aat	474
Glu	Val	Val	Asn	Pro	Glu	Val	Glu	Tyr	Ile	Glu	Ser	Glu	Asn	Leu	Asn	
	70					75				80						
gat	gta	gac	gat	att	gat	act	tgt	ctc	aag	acc	cta	tta	gct	gga	ctt	522
Asp	Val	Asp	Asp	Ile	Asp	Thr	Cys	Leu	Lys	Thr	Leu	Leu	Ala	Gly	Leu	
85					90					95					100	
gac	tca	aag	gat	tgg	gtc	ctg	gtt	tgt	gac	aca	ctg	aat	aac	gta	cgt	570
Asp	Ser	Lys	Asp	Trp	Val	Leu	Val	Cys	Asp	Thr	Leu	Asn	Asn	Val	Arg	
				105					110					115		
cga	ttg	tct	ata	ttt	cat	aag	gaa	gca	atg	ctt	gat	atg	ctg	ggg	gat	618
Arg	Leu	Ser	Ile	Phe	His	Lys	Glu	Ala	Met	Leu	Asp	Met	Leu	Gly	Asp	
			120					125					130			
gtg	atc	aca	tct	att	gca	aag	tca	ctg	aaa	agt	cct	aga	agt	gct	gtt	666
Val	Ile	Thr	Ser	Ile	Ala	Lys	Ser	Leu	Lys	Ser	Pro	Arg	Ser	Ala	Val	
		135					140					145				
tgc	aaa	act	gcc	att	atg	aca	tct	gca	gac	att	ttc	agt	gca	tat	aat	714
Cys	Lys	Thr	Ala	Ile	Met	Thr	Ser	Ala	Asp	Ile	Phe	Ser	Ala	Tyr	Asn	
	150					155					160					
gat	ctt	ata	ata	gat	tca	ttg	gac	cct	ctg	cta	gta	caa	ctt	ctt	ctc	762
Asp	Leu	Ile	Ile	Asp	Ser	Leu	Asp	Pro	Leu	Leu	Val	Gln	Leu	Leu	Leu	
165					170					175					180	
aag	tct	tca	caa	gac	aaa	cgc	ttt	gta	tgt	gag	gca	gct	gaa	aaa	gcc	810
Lys	Ser	Ser	Gln	Asp	Lys	Arg	Phe	Val	Cys	Glu	Ala	Ala	Glu	Lys	Ala	
				185					190					195		
ttg	ata	tca	atg	act	att	tgg	att	tcc	cct	att	tct	tta	ttg	cca	aaa	858
Leu	Ile	Ser	Met	Thr	Ile	Trp	Ile	Ser	Pro	Ile	Ser	Leu	Leu	Pro	Lys	
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Leu	Gln	Pro	Tyr	Leu	Lys	Asn	Lys	Asn	Pro	Arg	Ile	Arg	Ala	Lys	Ala	
		215					220					225				
tca	atg	tgc	ttt	tct	cgg	agt	gtt	cct	cag	ctg	ggg	gca	gaa	ggc	ata	954
Ser	Met	Cys	Phe	Ser	Arg	Ser	Val	Pro	Gln	Leu	Gly	Ala	Glu	Gly	Ile	
	230					235					240					
aag	aca	tat	ggg	att	gac	aaa	ttg	atc	caa	gta	gct	gca	tct	cag	ttg	1002
Lys	Thr	Tyr	Gly	Ile	Asp	Lys	Leu	Ile	Gln	Val	Ala	Ala	Ser	Gln	Leu	

245	250	255	260	
agt gac cag ctc cca gag tcc agg gaa gcg gcc cga act cta ctt ctc				1050
Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg Thr Leu Leu Leu	265	270	275	
gag ctt caa aat gtg tat gag aaa tct cat gat ctc atc aag cca gct				1098
Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu Ile Lys Pro Ala	280	285	290	
act cct act gtc aat aat gag cat act gtg aat gag gag aat cca gag				1146
Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu Glu Asn Pro Glu	295	300	305	
gtg agt tct tgg gaa agc ttc tgt cag tca aaa ctt tct cct ctt agt				1194
Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu Ser Pro Leu Ser	310	315	320	
gct caa gct gta ctt cgt gta acc acc agt atc gct cgg gag ggt ctt				1242
Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala Arg Glu Gly Leu	325	330	335	340
gtt tca tga cacgcacatt aaacctcact ttgcggcttt catcatttcc				1291
Val Ser				
ttgttttgctt atcatttttct tctgtaaata cagtgcgaca attgagatga ttgagttgag				1351
ttgtcgtcga agcacgtatt gagcccaaga tttataatgt gtattctatt attttccccc				1411
tagctgttgt tacctatatt actttttgatt aatactacta ctactactag ataatggacc				1471
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Pro Arg Val Arg Ala Leu Leu Ala Ser Thr Ile Val Pro His Pro Asn	1	5	10	15
caa gga aat atg cat gaa cct gct atc gac atg cct ttt gga agt gta				96
Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val	20	25	30	
ctt ctg caa gca ctg gtt tca agt gat gtc aat gga gat atg gag gca				144
Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala	35	40	45	

tgt tgc aga gca tct agc gtt ctt tct cac att gtc aag gac aac atg	192
Cys Cys Arg Ala Ser Ser Val Leu Ser His Ile Val Lys Asp Asn Met	
50 55 60	
caa agc aag gat cgt gta ttg caa att cag ctt gag aca ctt aca ccg	240
Gln Ser Lys Asp Arg Val Leu Gln Ile Gln Leu Glu Thr Leu Thr Pro	
65 70 75 80	
tcc ttg ggg cgc act gag cca gta ttg cat cgt att gtc aca tgt ttg	288
Ser Leu Gly Arg Thr Glu Pro Val Leu His Arg Ile Val Thr Cys Leu	
85 90 95	
tcc atc gca gcc tca aca gag gga gaa aac aac caa aac aac caa cca	336
Ser Ile Ala Ala Ser Thr Glu Gly Glu Asn Asn Gln Asn Asn Gln Pro	
100 105 110	
gaa gaa ccg tac att caa cct gtt att ctt cgg cta ctc atc ata tgg	384
Glu Glu Pro Tyr Ile Gln Pro Val Ile Leu Arg Leu Leu Ile Ile Trp	
115 120 125	
ctt gtt gat tgt tca aat gct gtt aac tgc ctg ttg gaa tca gca gtg	432
Leu Val Asp Cys Ser Asn Ala Val Asn Cys Leu Leu Glu Ser Ala Val	
130 135 140	
cat ctg aac tac ata ata gag ctt gct tca agc aaa cgt tac act gct	480
His Leu Asn Tyr Ile Ile Glu Leu Ala Ser Ser Lys Arg Tyr Thr Ala	
145 150 155 160	
tgt gtt cgt gga ctg gct gct gtt gtt cta ggt gct tgc atc ctg tac	528
Cys Val Arg Gly Leu Ala Ala Val Val Leu Gly Ala Cys Ile Leu Tyr	
165 170 175	
aat gct agc cat gag aag ggc cgt gat gct ttt gct gtt gca gat gct	576
Asn Ala Ser His Glu Lys Gly Arg Asp Ala Phe Ala Val Ala Asp Ala	
180 185 190	
ata agt caa aag att ggc ctc aca acg tac ttc ttg agg ttt gac gaa	624
Ile Ser Gln Lys Ile Gly Leu Thr Thr Tyr Phe Leu Arg Phe Asp Glu	
195 200 205	
ttg agg aga agc ttg gca cat cct ttg cca gag cag cat cat cgc aag	672
Leu Arg Arg Ser Leu Ala His Pro Leu Pro Glu Gln His His Arg Lys	
210 215 220	
gag ctt tcc cga tca agt gcg aat agc atg tca gat ttc caa gaa att	720
Glu Leu Ser Arg Ser Ser Ala Asn Ser Met Ser Asp Phe Gln Glu Ile	
225 230 235 240	
gaa gag gat gaa aca aat aaa gat gat caa cac cct gtc ctc tca gaa	768
Glu Glu Asp Glu Thr Asn Lys Asp Asp Gln His Pro Val Leu Ser Glu	
245 250 255	
ata ttt gat tca cag ttt gtt aat ttt ctt agt aag ctc gag gct gat	816
Ile Phe Asp Ser Gln Phe Val Asn Phe Leu Ser Lys Leu Glu Ala Asp	
260 265 270	
att aga gaa aac ata atg gat ata ttt agt cgg aca aaa act gca act	864

Ile Arg Glu Asn Ile Met Asp Ile Phe Ser Arg Thr Lys Thr Ala Thr	
275 280 285	
gca ctc ctt cct act gaa ttg gag cag aag aac ggg gag gtt gat gga	912
Ala Leu Leu Pro Thr Glu Leu Glu Gln Lys Asn Gly Glu Val Asp Gly	
290 295 300	
gag tat atc aaa cga cta aag tcg ttt gta gag aaa cag tgc aat gag	960
Glu Tyr Ile Lys Arg Leu Lys Ser Phe Val Glu Lys Gln Cys Asn Glu	
305 310 315 320	
atg cag gac ttg ctg gct cga aac gca atg tta gca gaa gag tta gtg	1008
Met Gln Asp Leu Leu Ala Arg Asn Ala Met Leu Ala Glu Glu Leu Val	
325 330 335	
aga act ggt ggt ggt acc acc aca gat act tca cag aga ccg aac aac	1056
Arg Thr Gly Gly Gly Thr Thr Thr Asp Thr Ser Gln Arg Pro Asn Asn	
340 345 350	
ggg cga gaa agg gtc cag atc gaa gcc ctg aga caa gaa ctg gag gga	1104
Gly Arg Glu Arg Val Gln Ile Glu Ala Leu Arg Gln Glu Leu Glu Gly	
355 360 365	
gcg aga cga cag ata gag gca ctc gaa act gac aag tcc cag atc gaa	1152
Ala Arg Arg Gln Ile Glu Ala Leu Glu Thr Asp Lys Ser Gln Ile Glu	
370 375 380	
gcc gaa gct aac aac caa cga aac ctt gca gta aaa ctg gag tcc gat	1200
Ala Glu Ala Asn Asn Gln Arg Asn Leu Ala Val Lys Leu Glu Ser Asp	
385 390 395 400	
ctc aag agc ttg tca gaa gct tac aac agc ata gag cag gcc aac tac	1248
Leu Lys Ser Leu Ser Glu Ala Tyr Asn Ser Ile Glu Gln Ala Asn Tyr	
405 410 415	
cgc ctg gat gcc gag gta aaa acc ttg cgg cag gga ggc agt gtg ccg	1296
Arg Leu Asp Ala Glu Val Lys Thr Leu Arg Gln Gly Gly Ser Val Pro	
420 425 430	
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Tyr Pro Asp Val Glu Ala Ile Lys Ala Gln Ala Lys Glu Glu Ala Glu	
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Lys Asp Ser Glu Ala Glu Leu Asn Gly Leu Leu Val Cys Leu Gly Gln	
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gaa caa act aag gtt gag aag ctg agc aca agg ctg gca gag ctc ggc	1440
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465 470 475 480	
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Glu Asp Val Asp Ala Leu Leu Gln Gly Ile Gly Asp Asp Thr Ala Ile	
485 490 495	
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Pro Asp Asp Asp Asp Asp Asp Asp Glu Asp Ser Glu Glu	

500

505

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gatcactg cag ttt aag att gat cca caa gat ttt caa gat tca gaa cca 170
 Gln Phe Lys Ile Asp Pro Gln Asp Phe Gln Asp Ser Glu Pro
 1 5 10

gat att ctt gca aat tct gct tca tcg ata ata gaa cgg atc aaa gaa 218
 Asp Ile Leu Ala Asn Ser Ala Ser Ser Ile Ile Glu Arg Ile Lys Glu
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aac agt gat cag tgt gcc gcg gct ctc agg tcg ctc tgt cgc cgg aaa 266
 Asn Ser Asp Gln Cys Ala Ala Ala Leu Arg Ser Leu Cys Arg Arg Lys
 35 40 45

aag ggc ctc act gtc gag gag gca agc ttg att ggt gtt gac agc ctt 314
 Lys Gly Leu Thr Val Glu Glu Ala Ser Leu Ile Gly Val Asp Ser Leu
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ggt att gat gta aga gcc ttt tct ggc ttg gaa gtt aag act gtt cga 362
 Gly Ile Asp Val Arg Ala Phe Ser Gly Leu Glu Val Lys Thr Val Arg
 65 70 75

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 Phe Ser Phe Asn Ala Gln Ala Leu Ser Glu Arg Ser Ala Glu Lys Lys
 80 85 90

atc agg cga atg ctt ttc ccc cgt taccagcgta aaaacgtgaa agcctctact 464
 Ile Arg Arg Met Leu Phe Pro Arg
 95 100

gaagatgagt cttaacctat cagctgtttt tcctgagaaa gcatgcaaac acctggttca 524

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cgcacaacct gtcgactatg agaatgacca aaaacatcag agtaataagg tttgccatgc 644

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 Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
 20 25 30

tgt cga gaa gct gaa ggg agg cca aga att gca tct gtc tat gct gat 144
 Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
 35 40 45

ata gag aga agg gtt ggg ggc ttc gac ttt tta gag tgt aat aac aag 192
 Ile Glu Arg Arg Val Gly Gly Phe Asp Phe Leu Glu Cys Asn Asn Lys
 50 55 60

gac ttc agg gct ctc aga ata ttg ggt gca ttg aac gcg aga gat gct 240
 Asp Phe Arg Ala Leu Arg Ile Leu Gly Ala Leu Asn Ala Arg Asp Ala
 65 70 75 80

aag aac aag aat gac agc agt ggc aga cca atg gct act cac aga aca 288
 Lys Asn Lys Asn Asp Ser Ser Gly Arg Pro Met Ala Thr His Arg Thr
 85 90 95

gga tat gac cta acc acc tct gga agc ttc cag gct cct att gtg gtc 336
 Gly Tyr Asp Leu Thr Thr Ser Gly Ser Phe Gln Ala Pro Ile Val Val
 100 105 110

atg aag cct gca gga acc act gaa aag cat ggg gtt tca ctt gct tct 384
 Met Lys Pro Ala Gly Thr Thr Glu Lys His Gly Val Ser Leu Ala Ser
 115 120 125

gtt gcc ccc ata gca ggc cta aga agc ctt aga aag ttg cca gct aga 432
 Val Ala Pro Ile Ala Gly Leu Arg Ser Leu Arg Lys Leu Pro Ala Arg

130	135	140	
tat tca tct ttc act ggc aca aat gag acc agc aca aat gag aat att			480
Tyr Ser Ser Phe Thr Gly Thr Asn Glu Thr Ser Thr Asn Glu Asn Ile			
145	150	155	160
cat ctt cgg atg tca aga gct caa ttg aag tct gaa gaa act gtc agc			528
His Leu Arg Met Ser Arg Ala Gln Leu Lys Ser Glu Glu Thr Val Ser			
	165	170	175
agt gcc aac tcg cca agg cct aca agc tca tca agt ccc aga aat gtg			576
Ser Ala Asn Ser Pro Arg Pro Thr Ser Ser Ser Ser Pro Arg Asn Val			
	180	185	190
cta aag aat gca gag cct gag agg aga tcc cgt cca cct gtt tca cca			624
Leu Lys Asn Ala Glu Pro Glu Arg Arg Ser Arg Pro Pro Val Ser Pro			
	195	200	205
aaa tct cca agc aag aag tcc aat gaa gtt gtc tcc cca aaa gga aga			672
Lys Ser Pro Ser Lys Lys Ser Asn Glu Val Val Ser Pro Lys Gly Arg			
	210	215	220
aca aga tca aag cct tct cag gtg aaa agc cac cgt gat gag gtc tta			720
Thr Arg Ser Lys Pro Ser Gln Val Lys Ser His Arg Asp Glu Val Leu			
225	230	235	240
cag agt aca ggg aac aga ata agc tta gct aag cag gta gat gtc agc			768
Gln Ser Thr Gly Asn Arg Ile Ser Leu Ala Lys Gln Val Asp Val Ser			
	245	250	255
att ata gac tgt cca aag ctt ccg ggt ggc aac tca acc ttc gtt cca			816
Ile Ile Asp Cys Pro Lys Leu Pro Gly Gly Asn Ser Thr Phe Val Pro			
	260	265	270
cca agc aat gct gct gca aca gca agt cat aag gct cct tca att ctg			864
Pro Ser Asn Ala Ala Thr Ala Ser His Lys Ala Pro Ser Ile Leu			
	275	280	285
gat tca gac caa aac att cat tca ctg gac aac att cca agc cct gtc			912
Asp Ser Asp Gln Asn Ile His Ser Leu Asp Asn Ile Pro Ser Pro Val			
	290	295	300
tct gtc ctt gat acg tcc ttc tat cat aaa agg atc tca gat tca ttc			960
Ser Val Leu Asp Thr Ser Phe Tyr His Lys Arg Ile Ser Asp Ser Phe			
305	310	315	320
aaa gat ggt gag aca cat tct tca gag gaa tgc tgg aac cca aac agc			1008
Lys Asp Gly Glu Thr His Ser Ser Glu Glu Cys Trp Asn Pro Asn Ser			
	325	330	335
ctg cct gac aca cca cag tca aaa gcg agc agt gaa gcc aac cag att			1056
Leu Pro Asp Thr Pro Gln Ser Lys Ala Ser Ser Glu Ala Asn Gln Ile			
	340	345	350
aaa cca gaa aat ttg gaa gtt ctg atc cag aag ctt gag caa cta caa			1104
Lys Pro Glu Asn Leu Glu Val Leu Ile Gln Lys Leu Glu Gln Leu Gln			
	355	360	365

tca atg aac gaa gaa gac gca agt atc aaa gaa gtc atg gca tca gtc	1152
Ser Met Asn Glu Glu Asp Ala Ser Ile Lys Glu Val Met Ala Ser Val	
370 375 380	
act gca aat aaa gat cac cag tat atc tat gag ata ctg ttg gca tct	1200
Thr Ala Asn Lys Asp His Gln Tyr Ile Tyr Glu Ile Leu Leu Ala Ser	
385 390 395 400	
ggc ctt tta cac aaa gaa cat agt atc acg gca tta cct gct caa ctc	1248
Gly Leu Leu His Lys Glu His Ser Ile Thr Ala Leu Pro Ala Gln Leu	
405 410 415	
caa cca tca aat tat cca atc aat ccg gag ctc ttc ctc att ctt gag	1296
Gln Pro Ser Asn Tyr Pro Ile Asn Pro Glu Leu Phe Leu Ile Leu Glu	
420 425 430	
caa aca aaa cca gac tta gtt ttt gca ttc caa act gtc agt gga act	1344
Gln Thr Lys Pro Asp Leu Val Phe Ala Phe Gln Thr Val Ser Gly Thr	
435 440 445	
aag aaa agt tgt aag cct tac acg ggg aag ctt cac cga aga ctt gtg	1392
Lys Lys Ser Cys Lys Pro Tyr Thr Gly Lys Leu His Arg Arg Leu Val	
450 455 460	
ttt gac ctg gta aac gaa aca ata gct caa aag atg atc atc tgc aga	1440
Phe Asp Leu Val Asn Glu Thr Ile Ala Gln Lys Met Ile Ile Cys Arg	
465 470 475 480	
tct gga agc cag cca gta aag ttt ctt caa tca agg aag ttg agt ggg	1488
Ser Gly Ser Gln Pro Val Lys Phe Leu Gln Ser Arg Lys Leu Ser Gly	
485 490 495	
tgg caa cta ttc aag gat ttg tgc act gag gtt gac agg caa ata aaa	1536
Trp Gln Leu Phe Lys Asp Leu Cys Thr Glu Val Asp Arg Gln Ile Lys	
500 505 510	
tgc acc ggg gag gag gag aat gga aac atg ata tta gat gag gat aca	1584
Cys Thr Gly Glu Glu Glu Asn Gly Asn Met Ile Leu Asp Glu Asp Thr	
515 520 525	
gtc aat gga acg aaa gat tgg atg agc ttc gac act atg cta cat ggc	1632
Val Asn Gly Thr Lys Asp Trp Met Ser Phe Asp Thr Met Leu His Gly	
530 535 540	
atg gtt tgg gag att gaa cga tcc atc ttc aag ggt ctt atc gac gag	1680
Met Val Trp Glu Ile Glu Arg Ser Ile Phe Lys Gly Leu Ile Asp Glu	
545 550 555 560	
gtt atc ggc ggt gag act ata gag aag atg caa ttt ggg caa agg aaa	1728
Val Ile Gly Gly Glu Thr Ile Glu Lys Met Gln Phe Gly Gln Arg Lys	
565 570 575	
ctg cag agg cag ctt tct ttc agt agt ata aac tga atacgcgtcg	1774
Leu Gln Arg Gln Leu Ser Phe Ser Ser Ile Asn	
580 585	

tagtagtcat ttccatggag aagcttataa caactagtaa atgtgacagt ttcttttttt 1834
 ttctttctgaa gactaaactg tacaagtata aatgatcctc aacactagtc ttgctgcctg 1894
 actattgcaa ttcgagagtt gtgcgac 1921

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 <213> Zea mays

<220>
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 Pro Arg Val Arg Ile Phe Leu Ala Trp Trp Leu Thr Arg Lys Ala Gln
 1 5 10 15

att cac tgc ctg gca gtt caa atg ctg ctt ctg aga tgc ctg cta atg 96
 Ile His Cys Leu Ala Val Gln Met Leu Leu Leu Arg Cys Leu Leu Met
 20 25 30

gat ctt gat cga caa aac act gga aag gct aca gtg cta ggt gat gct 144
 Asp Leu Asp Arg Gln Asn Thr Gly Lys Ala Thr Val Leu Gly Asp Ala
 35 40 45

gcg cga gta ctg cga gat cta atc act caa gtg gaa tct ctc agg cag 192
 Ala Arg Val Leu Arg Asp Leu Ile Thr Gln Val Glu Ser Leu Arg Gln
 50 55 60

gaa caa tct gct ctt gta tcg gag cgc caa tat gtc agt tcc gag aag 240
 Glu Gln Ser Ala Leu Val Ser Glu Arg Gln Tyr Val Ser Ser Glu Lys
 65 70 75 80

aat gag ctg caa gag gag aac agt tcg ctc aag tcc caa ata tcg gaa 288
 Asn Glu Leu Gln Glu Glu Asn Ser Ser Leu Lys Ser Gln Ile Ser Glu
 85 90 95

cta caa acc gag ctc tgc gca agg atg agg agc agc agc ctg agc caa 336
 Leu Gln Thr Glu Leu Cys Ala Arg Met Arg Ser Ser Ser Leu Ser Gln
 100 105 110

acc agc atc ggg atg tcg gat ccg gca act cac cag cag atg cag atg 384
 Thr Ser Ile Gly Met Ser Asp Pro Ala Thr His Gln Gln Met Gln Met
 115 120 125

tgg agc agc att ccc cac tta agc tcc gtg gcc atg gcg gcg cgc cca 432
 Trp Ser Ser Ile Pro His Leu Ser Ser Val Ala Met Ala Ala Arg Pro
 130 135 140

gca agt gca gcg tcc ccg ttg cac ggc cag gag ggc tac tct gct gac 480
 Ala Ser Ala Ala Ser Pro Leu His Gly Gln Glu Gly Tyr Ser Ala Asp
 145 150 155 160

gcc ggt caa gcg ggc tac gcg ccg cag ccg caa cct cgg gag ctg cag 528
Ala Gly Gln Ala Gly Tyr Ala Pro Gln Pro Gln Pro Arg Glu Leu Gln
165 170 175

ctc ttt ccg ggg tca tcg gca tcg tct tca ccg gag cgt gaa cgt tct 576
Leu Phe Pro Gly Ser Ser Ala Ser Ser Ser Pro Glu Arg Glu Arg Ser
180 185 190

tcc ccg ctc gga agc ggc cag gcc acg ccg ccg agc ctg aca gat tcc 624
Ser Arg Leu Gly Ser Gly Gln Ala Thr Arg Pro Ser Leu Thr Asp Ser
195 200 205

ttg ccg ggt cag ctc tgc ctg agc ctc cta cag cca tct cag gaa gca 672
Leu Pro Gly Gln Leu Cys Leu Ser Leu Leu Gln Pro Ser Gln Glu Ala
210 215 220

agc ggc ggc ggc ggc ggc ggc gtc atg tcg cgc agc aga gag gaa ccg 720
Ser Gly Gly Gly Gly Gly Gly Val Met Ser Arg Ser Arg Glu Glu Arg
225 230 235 240

cgg gac ggg tag ccaactgaca gacaacgcac ttgaatcggg gtgtgtggcg 772
Arg Asp Gly

gcggcgattg tcctgtaaat accaagaatt ccgtcccttt actggctcgt tcatccagaa 832

ctaagtctgg tagctgccct gtgttgagcg gcagctctgc ttgttctaga agcttctgag 892

aacatgtgtg ggctatgttt tccatgagat tgtaagatgt gaggtggagc cgctagaaca 952

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aatttgatgg c 1023

<210> 24
<211> 1599
<212> DNA
<213> Zea mays

<220>
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<222> (3) .. (1274)

<400> 24

cc acg cgt ccg gcc atc ccg gag ctt tgg agg ccg aat ccc agt caa 47
Thr Arg Pro Ala Ile Arg Glu Leu Trp Arg Pro Asn Pro Ser Gln
1 5 10 15

tta att ctc cta caa aca agg gga att ggt gct ttg cat aaa gag ctt 95
Leu Ile Leu Leu Gln Thr Arg Gly Ile Gly Ala Leu His Lys Glu Leu
20 25 30

cca aaa gcg tgt gct ttg act ggc agc agt gat ccg tgc tac atc gaa 143
Pro Lys Ala Cys Ala Leu Thr Gly Ser Ser Asp Pro Cys Tyr Ile Glu
35 40 45

gca tat cat ttg gca gat cca act gat ggc aga att acc cta cat cta	191
Ala Tyr His Leu Ala Asp Pro Thr Asp Gly Arg Ile Thr Leu His Leu	
50 55 60	
aag att tta aat ttg act gag ctg gaa ctc aac agg gtg gac atc cgt	239
Lys Ile Leu Asn Leu Thr Glu Leu Glu Leu Asn Arg Val Asp Ile Arg	
65 70 75	
gtt ggc ctg tct gga gca ctg tat tat atg gat ggt ttc tct cgc act	287
Val Gly Leu Ser Gly Ala Leu Tyr Tyr Met Asp Gly Phe Ser Arg Thr	
80 85 90 95	
gtt cgt cac ctt cgg aat ctt gtt tcc cag gat cca gtc caa agt agt	335
Val Arg His Leu Arg Asn Leu Val Ser Gln Asp Pro Val Gln Ser Ser	
100 105 110	
gtg act gtt gga gtt tca cat ttt gag aga tgc tcg ctc tgg gtt caa	383
Val Thr Val Gly Val Ser His Phe Glu Arg Cys Ser Leu Trp Val Gln	
115 120 125	
gtt ttg tat tac ccg ttt tat gga agt agt gga tca aca gac tat gaa	431
Val Leu Tyr Tyr Pro Phe Tyr Gly Ser Ser Gly Ser Thr Asp Tyr Glu	
130 135 140	
gga gat tat gca gaa gag gat tca cag atg atg agg cag aag cgc tca	479
Gly Asp Tyr Ala Glu Glu Asp Ser Gln Met Met Arg Gln Lys Arg Ser	
145 150 155	
cat cgg cct gaa ctt ggg gaa ccg gtt gtt ttg cgg tgc caa cca tac	527
His Arg Pro Glu Leu Gly Glu Pro Val Val Leu Arg Cys Gln Pro Tyr	
160 165 170 175	
aag ttt cct ctc gct gag ctc ctc cta cca tta gag tgt tct cca gtt	575
Lys Phe Pro Leu Ala Glu Leu Leu Leu Pro Leu Glu Cys Ser Pro Val	
180 185 190	
gag tat ttc cgg cta tgg cct agc cta cca gcc atg gtg gag tgc act	623
Glu Tyr Phe Arg Leu Trp Pro Ser Leu Pro Ala Met Val Glu Cys Thr	
195 200 205	
ggc aca tac aca tat gaa ggc agt ggt ttc aag gcc acc gct gct cag	671
Gly Thr Tyr Thr Tyr Glu Gly Ser Gly Phe Lys Ala Thr Ala Ala Gln	
210 215 220	
cag tat gac agc tct ccc ttc ctc agt gga ttg aag tcg att tct tct	719
Gln Tyr Asp Ser Ser Pro Phe Leu Ser Gly Leu Lys Ser Ile Ser Ser	
225 230 235	
aag ccc ttc cat caa gtc tgc tca cat ttc atc cgg aca gta gct gga	767
Lys Pro Phe His Gln Val Cys Ser His Phe Ile Arg Thr Val Ala Gly	
240 245 250 255	
ttc cag tta tgt tat gca gca aag aca tgg ttt ggt gga ttt gtg ggc	815
Phe Gln Leu Cys Tyr Ala Ala Lys Thr Trp Phe Gly Gly Phe Val Gly	
260 265 270	

atg atg ata ttt ggg gca agt gaa gtc agc cgg aat gtt gat ttg ggt	863
Met Met Ile Phe Gly Ala Ser Glu Val Ser Arg Asn Val Asp Leu Gly	
275 280 285	
gat gag acc acc aca atg atc tgc aaa ttc gtc atg cgc gca tcc gat	911
Asp Glu Thr Thr Thr Met Ile Cys Lys Phe Val Met Arg Ala Ser Asp	
290 295 300	
gaa tcc atc acg aga gag atc aaa tcc gac ctc cag ggc tgg ctg gat	959
Glu Ser Ile Thr Arg Glu Ile Lys Ser Asp Leu Gln Gly Trp Leu Asp	
305 310 315	
gat atc acc gac ggc gct gtg gaa tac atg cct gag gat gag gtg aag	1007
Asp Ile Thr Asp Gly Ala Val Glu Tyr Met Pro Glu Asp Glu Val Lys	
320 325 330 335	
agt gtg gcc gcc gag cag ctg aag atc tcc atg gag agg att gcc ctg	1055
Ser Val Ala Ala Glu Gln Leu Lys Ile Ser Met Glu Arg Ile Ala Leu	
340 345 350	
ctc aag gca gcc agg cca aag gtc cca ccc gca aag acc gat caa gag	1103
Leu Lys Ala Ala Arg Pro Lys Val Pro Pro Ala Lys Thr Asp Gln Glu	
355 360 365	
gag gaa gag gag cga aag cag agc gag gaa cta gat ggg ttt gga aac	1151
Glu Glu Glu Glu Arg Lys Gln Ser Glu Glu Leu Asp Gly Phe Gly Asn	
370 375 380	
ccc aag ggc ccc tcg acg ctc tcc aag ctc acc gcg gag gag gct gag	1199
Pro Lys Gly Pro Ser Thr Leu Ser Lys Leu Thr Ala Glu Glu Ala Glu	
385 390 395	
cac cgc gct ctc cag gct gcc gtg ctt cag gag tgg cac cag cta tgc	1247
His Arg Ala Leu Gln Ala Ala Val Leu Gln Glu Trp His Gln Leu Cys	
400 405 410 415	
aaa gag aga gcc atg aaa gcg cag tga ggtcgatttg gaccgtgtgg	1294
Lys Glu Arg Ala Met Lys Ala Gln	
420	
atcttacgcg catgtataat tttgtat tttt tccttcgtct cccattcttt gcgtgtctat	1354
actgctgggtt tcactcactg tataccgctcg ccgatttggt cattgtattc tcaaatactt	1414
gtgcacgaaa aaacctgttt tgtaacatac tactgttagg gcgttttttaa gcttcggtgt	1474
gaagatcgat tgtacaagag aatccaaatg tcattgttgc cttcccagtt ttatgaaaat	1534
gcattctgta attgaagaat tctccccaaa atgccacgat ttataaataa gaaatgtgga	1594
attgt	1599

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 <211> 1629
 <212> DNA
 <213> Zea mays

<220>
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 <222> (1) .. (1116)

<400> 25

cca cgc gtc cgt gct tct ggt att agt gga act tct gtg cga ctt act	48
Pro Arg Val Arg Ala Ser Gly Ile Ser Gly Thr Ser Val Arg Leu Thr	
1 5 10 15	
gct gga gct ggt ctc cct gtt cac atg aaa ggt gaa cta aac aca gct	96
Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala	
20 25 30	
ttc ata gga ctg ggg gat gac ggt gga tat ggt ggt ggc tgg gtt cct	144
Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Gly Trp Val Pro	
35 40 45	
ttg gca gct ctt aaa aag gtg ctg aga ggg atc cta aag tac ctc gga	192
Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly	
50 55 60	
gtt cta tgg ttg ttt gca caa ttg cct gaa ctt ttg aaa gaa ata cta	240
Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Leu Lys Glu Ile Leu	
65 70 75 80	
gga tca atc tta aag gac aat gaa ggt gct ctc ttg aat ttg gat caa	288
Gly Ser Ile Leu Lys Asp Asn Glu Gly Ala Leu Leu Asn Leu Asp Gln	
85 90 95	
gag cag cct gca ctc cgg ttc tat gtc gga gga tat gta ttt gca gta	336
Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val	
100 105 110	
agt gtc cat cgg gtt caa ctg ctt cta caa gtt ttg agt gtg aaa aga	384
Ser Val His Arg Val Gln Leu Leu Leu Gln Val Leu Ser Val Lys Arg	
115 120 125	
ttt cac cac cag caa cag cag cag cag gct caa agc aat gct cag gaa	432
Phe His His Gln Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu	
130 135 140	
gag cta gca gca gtt gaa atc aat gaa ata tgt gac tac ttt agc aga	480
Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg	
145 150 155 160	
cgt gtt gcc tcc gaa cca tat gat gct tct aga gtt gct tct ttt atc	528
Arg Val Ala Ser Glu Pro Tyr Asp Ala Ser Arg Val Ala Ser Phe Ile	
165 170 175	
act ttg ctt aca ttg cca att ttg gtt ctg cgc gag ttt tta aag ctg	576
Thr Leu Leu Thr Leu Pro Ile Leu Val Leu Arg Glu Phe Leu Lys Leu	
180 185 190	
att aca tgg aag aaa ggt ctt tcc ccg gtt cat ggg gac att gct act	624
Ile Thr Trp Lys Lys Gly Leu Ser Pro Val His Gly Asp Ile Ala Thr	

atctggtata tgtgttggtg tacatgatat attggcactg gacttgagac tgacgcattt 1576
gacgtcttag tattagcagg acatctctag ttgtgttcag agtgattgga ccc 1629

<210> 26
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<213> Zea mays

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<400> 26

cc acg cgt ccg gat gat ccc tgt cca tat ctt ctt tcc ata tgg acc 47
Thr Arg Pro Asp Asp Pro Cys Pro Tyr Leu Leu Ser Ile Trp Thr
1 5 10 15

cca ggt gaa act gca caa tcg atc gat gcc ccc aag aca ttc tgt gat 95
Pro Gly Glu Thr Ala Gln Ser Ile Asp Ala Pro Lys Thr Phe Cys Asp
20 25 30

tca ggg gag acg ggt aga cta tgt gga agt tca aca tgc ttt agt tgc 143
Ser Gly Glu Thr Gly Arg Leu Cys Gly Ser Ser Thr Cys Phe Ser Cys
35 40 45

aac aat ata cga gaa atg cag gct cag aaa gtc aga gga aca ctt ttg 191
Asn Asn Ile Arg Glu Met Gln Ala Gln Lys Val Arg Gly Thr Leu Leu
50 55 60

ata cca tgc cga aca gca atg aga gga agc ttc cca ctt aat ggg acg 239
Ile Pro Cys Arg Thr Ala Met Arg Gly Ser Phe Pro Leu Asn Gly Thr
65 70 75

tat ttt caa gtt aat gag gta ttt gct gac cat tgc tca agt caa aat 287
Tyr Phe Gln Val Asn Glu Val Phe Ala Asp His Cys Ser Ser Gln Asn
80 85 90 95

cca att gat gtc cca cga agt tgg att tgg gac ctc cca aga cga act 335
Pro Ile Asp Val Pro Arg Ser Trp Ile Trp Asp Leu Pro Arg Arg Thr
100 105 110

gtt tac ttt gga acc tca gtt cct aca ata ttc aga ggt tta acg act 383
Val Tyr Phe Gly Thr Ser Val Pro Thr Ile Phe Arg Gly Leu Thr Thr
115 120 125

gaa gag ata caa cga tgc ttt tgg aga gga ttt gtt tgc gtg agg ggc 431
Glu Glu Ile Gln Arg Cys Phe Trp Arg Gly Phe Val Cys Val Arg Gly
130 135 140

ttt gat agg aca gtg agg gca cca agg ccc ctt tat gca agg ttg cat 479
Phe Asp Arg Thr Val Arg Ala Pro Arg Pro Leu Tyr Ala Arg Leu His
145 150 155

ttt cct gtc agc aag gtt gtt aga ggc aaa aag cct gga gca gca aga	527
Phe Pro Val Ser Lys Val Val Arg Gly Lys Lys Pro Gly Ala Ala Arg	
160 165 170 175	

gca gaa gaa taa tagtacattg aagaaatata ggggtgctaa ccagacgagg	579
Ala Glu Glu	

atggatagcc cgaaatgaga tgctgaccca atagggtcgcc aaatcacctc caaattctaa	639
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cccaatgact tccatctgta atgaatggca ataccttgaa aacctgtgat ggagatgttt	699
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tgtggcgaca tgatctctta aattagattc cgtcttttggc aacagcctag ctgttcttgt	759
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tgagtcgcat attcttttatt ctgaagatca atatagcaaa tgggagaaaa aacatagtgc	819
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acagtcgagc tgttctaatt gtacctcttg tgagtggaaat cagttgttgt acaacaggaa	879
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gatggaccta tctgtacaat ggctgtacat gttcttttgat catagtataa acaatgtaag	939
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cctcatcagc cgttatttga ttgttttc	966
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<211>	863
<212>	DNA
<213>	Zea mays

<220>	
<221>	CDS
<222>	(3) .. (671)

<400>	27
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cc acg cgt ccg ctc agg gtg aag aag ctc cag cag gag gcc gcc cgg	47
Thr Arg Pro Leu Arg Val Lys Lys Leu Gln Gln Glu Ala Ala Arg	
1 5 10 15	

tgc ctg agc ttg cac aag aca atg gag ctg cag ccg gag ctg tcg ctc	95
Cys Leu Ser Leu His Lys Thr Met Glu Leu Gln Pro Glu Leu Ser Leu	
20 25 30	

ggc cct gtg tgg ccg ggc ttc gcc gcc ggt gac ctg gcc gcc aag agc	143
Gly Pro Val Trp Pro Gly Phe Ala Ala Gly Asp Leu Ala Ala Lys Ser	
35 40 45	

tcc tcg tcc gag tct gac gga acc tcc cgg aag aag agg aag cac tac	191
Ser Ser Ser Glu Ser Asp Gly Thr Ser Arg Lys Lys Arg Lys His Tyr	
50 55 60	

acc gcc agc tgg gag gag cct cag cag ccg ccc gcg agc ctg gag ctc	239
Thr Ala Ser Trp Glu Glu Pro Gln Gln Pro Pro Ala Ser Leu Glu Leu	
65 70 75	

cag ctc aac gac cca ctg cct ctc gac tgg gag cag tgc ctc gac ctc	287
Gln Leu Asn Asp Pro Leu Pro Leu Asp Trp Glu Gln Cys Leu Asp Leu	
80 85 90 95	

caa tct ggg agg atg tat tac ctc aac cgg aag acg ctg aag aag agc	335
Gln Ser Gly Arg Met Tyr Tyr Leu Asn Arg Lys Thr Leu Lys Lys Ser	
100 105 110	
tgg gtc aga ccc cag gtg cag agc gtg aac ctg gac ctc aac atc tcc	383
Trp Val Arg Pro Gln Val Gln Ser Val Asn Leu Asp Leu Asn Ile Ser	
115 120 125	
acg gct gcc gcc atc gac aac tgt gcc gcc aac ggt gct gct gcc gct	431
Thr Ala Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala	
130 135 140	
gct tcc gac gac gag gac gag cca agg aaa ccc gct ggc act ttg ttc	479
Ala Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe	
145 150 155	
tct gga ggc agc atg gtg gcc gtg ccg tgc gcc aac tgc cat ctc cta	527
Ser Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu	
160 165 170 175	
gtc atg ctg tgc aag tcc tcc ccg tcc tgc ccc aac tgc aag ttc gtg	575
Val Met Leu Cys Lys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val	
180 185 190	
cag cct ctg gca cct gct gtg ccg cct gcg gcg gtg gcc cat tgg agg	623
Gln Pro Leu Ala Pro Ala Val Pro Pro Ala Ala Val Ala His Trp Arg	
195 200 205	
atc gat gcc gcc gtc aag ccg ctg gag acc ctg agc ctt ctc cat tag	671
Ile Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His	
210 215 220	
gcacatgcac ttcaccggca gcagattgta gaaaggaaat cgtagttacg tagtagtggt	731
gcattgggtta gtattactat tacctgggta atgcatgagc ggtcgaatga aaattggaaa	791
tgtgaaacta ccgtgcatgc atggtgacat gacaaaatac aaaatggtga agccagcctc	851
aaattaaact gc	863

<210> 28
 <211> 1438
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 <213> Zea mays

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ggctggaccg caacccaatt ggggggttaat tgggattgct actccgcggc tgccctgtccc	180

tcgtgttcct	ggattggcga	ggccaatcga	ctggtttgct	gcagcctcct	gggtagaatc	240
atg aag cta aaa aat agc gca gtg gag act ttt aag gag aac aat atg	288					
Met Lys Leu Lys Asn Ser Ala Val Glu Thr Phe Lys Glu Asn Asn Met						
1 5 10 15						
att ttc act tct gaa gga aat ctc cac tct aaa aaa atg cga gaa gat	336					
Ile Phe Thr Ser Glu Gly Asn Leu His Ser Lys Lys Met Arg Glu Asp						
20 25 30						
tat gtt gct agt cca aac caa ccg ggt gct gtc cag aca aga tgc aaa	384					
Tyr Val Ala Ser Pro Asn Gln Pro Gly Ala Val Gln Thr Arg Cys Lys						
35 40 45						
tgg ata att gga gat gta act gag gtc ttt gat cgc agc aca tgg aag	432					
Trp Ile Ile Gly Asp Val Thr Glu Val Phe Asp Arg Ser Thr Trp Lys						
50 55 60						
ctt gga aag atc tta aag atg cta aag aac aac tac ttt gtt atc agg	480					
Leu Gly Lys Ile Leu Lys Met Leu Lys Asn Asn Tyr Phe Val Ile Arg						
65 70 75 80						
ctt gct gat tgc atc cag ctg aaa gag ttc cac ata tct agt ttg aga	528					
Leu Ala Asp Cys Ile Gln Leu Lys Glu Phe His Ile Ser Ser Leu Arg						
85 90 95						
atc cca cgt ggt ctg gaa gct cct caa agc aag ccc ttt cat gca gca	576					
Ile Pro Arg Gly Leu Glu Ala Pro Gln Ser Lys Pro Phe His Ala Ala						
100 105 110						
gat aag gcc acc gga cgc ggt aat cgt cga cct gct gat ggc gcc ttg	624					
Asp Lys Ala Thr Gly Arg Gly Asn Arg Arg Pro Ala Asp Gly Ala Leu						
115 120 125						
ccc ggc gca agg gct gcg gat caa atg ggt cac cga gcc tac gag ctg	672					
Pro Gly Ala Arg Ala Ala Asp Gln Met Gly His Arg Ala Tyr Glu Leu						
130 135 140						
ggg agc agc ggc aag aag cgg aaa gca acc gca gac gcc tct cac cat	720					
Gly Ser Ser Gly Lys Lys Arg Lys Ala Thr Ala Asp Ala Ser His His						
145 150 155 160						
cta ggc aga gca gca gca gca cac tcc cgg aag gtc gcc gca gcc tcc	768					
Leu Gly Arg Ala Ala Ala Ala His Ser Arg Lys Val Ala Ala Ala Ser						
165 170 175						
aac ccg aac ggc ggc agc tac ccg cac agc tct tca cag gcc ata gaa	816					
Asn Pro Asn Gly Gly Ser Tyr Pro His Ser Ser Ser Gln Ala Ile Glu						
180 185 190						
gac gcc gaa tgc tcg gtg gcc agc tgc agc gtg gac gac ctt tac cgc	864					
Asp Ala Glu Cys Ser Val Ala Ser Cys Ser Val Asp Asp Leu Tyr Arg						
195 200 205						
ctc ggc aat ggc ggc aac gcc aag cgt cgc ccc gcc gcc gca ggg tgc	912					
Leu Gly Asn Gly Gly Asn Ala Lys Arg Arg Pro Ala Ala Ala Gly Cys						

275	280	285	
agg aaa gca gta gat gac ggg cgc aaa cta ttg aat ggt cac aac cgc			912
Arg Lys Ala Val Asp Asp Gly Arg Lys Leu Leu Asn Gly His Asn Arg			
290	295	300	
agg ggc caa gaa ttc tct agg ctg aac aaa agg cag aag aca gcg cta			960
Arg Gly Gln Glu Phe Ser Arg Leu Asn Lys Arg Gln Lys Thr Ala Leu			
305	310	315	320
gcc cag gta ttt ggg gct tca ctg cca gaa tgt tgt att act cgt gtc			1008
Ala Gln Val Phe Gly Ala Ser Leu Pro Glu Cys Cys Ile Thr Arg Val			
325	330	335	
tag tgagtgaaga acaactgtag ctgtgttttc cctccttctc cagacctca			1061
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gat gcc ctg ggg cga aaa ttt acc cgc ttt gga cat caa gcc aag gaa	95
Asp Ala Leu Gly Arg Lys Phe Thr Arg Phe Gly His Gln Ala Lys Glu	
20 25 30	
gac agg cag gcc gcc att ttc cgg tct gag aat ggg aac gta tgg cag	143
Asp Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln	
35 40 45	
gta aaa atc ttt ggt gaa gac aag acg ggc aag cgg tca ggg cag tat	191
Val Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr	
50 55 60	
cta gca ccg aca ggc ata ggg gac gtg ccc tat ctg cca aca att ccc	239
Leu Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro	
65 70 75	
cgc cgg atc att ttg gcg atc gcc gaa aag cat ggg gtc aaa cca ccg	287
Arg Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro	
80 85 90 95	
gaa gat ggt caa gat ttt tgg ccc tgg ttt gtg gat cat cct gag att	335

Glu Asp Gly Gln Asp Phe Trp Pro Trp Phe Val Asp His Pro Glu Ile	
100 105 110	
ccc ttg att gtg acg gaa ggg ggg aag aaa gct tta gcc gcc atc agc	383
Pro Leu Ile Val Thr Glu Gly Gly Lys Lys Ala Leu Ala Ala Ile Ser	
115 120 125	
caa ggt tac gtg gcc ctg agt ctc tat ggc tgt tta tgt ggc aac gat	431
Gln Gly Tyr Val Ala Leu Ser Leu Tyr Gly Cys Leu Cys Gly Asn Asp	
130 135 140	
ggt cta acc atc aaa ccg tca tta ttg ccc tat gtg cag ggg cga gaa	479
Gly Leu Thr Ile Lys Pro Ser Leu Leu Pro Tyr Val Gln Gly Arg Glu	
145 150 155	
gta gcg atc gcc tat gac cag gat gca aag ggt agc aag gga cga aag	527
Val Ala Ile Ala Tyr Asp Gln Asp Ala Lys Gly Ser Lys Gly Arg Lys	
160 165 170 175	
gca gtc ttt aag ggc aca aaa cgg ctg gct cgt aac ctg acc tat cac	575
Ala Val Phe Lys Gly Thr Lys Arg Leu Ala Arg Asn Leu Thr Tyr His	
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Ala Lys Ala Thr Val	
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cac gcc gcg ctg gcg tcg gcg gac gcc atg gtg gcc gtg cac ggc gcg	96
His Ala Ala Leu Ala Ser Ala Asp Ala Met Val Ala Val His Gly Ala	
20 25 30	
gcc gtc acc cac ttc ctc ttc atg cgc ccg ggc tcc gtg ctc ctc cag	144
Ala Val Thr His Phe Leu Phe Met Arg Pro Gly Ser Val Leu Leu Gln	
35 40 45	
gtc gtg ccc gtg ggg ctc gac tgg gcg gcc gac gcc ttc tac ggc aag	192
Val Val Pro Val Gly Leu Asp Trp Ala Ala Asp Ala Phe Tyr Gly Lys	
50 55 60	
ccc gcg cag cag ctc ggc ctc gag tac ctc gag tac aag gtg gcg ccc	240
Pro Ala Gln Gln Leu Gly Leu Glu Tyr Leu Glu Tyr Lys Val Ala Pro	

65	70	75	80	
gag gag agc tcg ctg gcc gcc gag tac ggc ctc gac agc acc gtt ctg				288
Glu Glu Ser Ser Leu Ala Ala Glu Tyr Gly Leu Asp Ser Thr Val Leu				
	85	90	95	
agg aac ccc tgg gtg atc agc agc cgc ggc tgg tgg gag atg aag aaa				336
Arg Asn Pro Trp Val Ile Ser Ser Arg Gly Trp Trp Glu Met Lys Lys				
	100	105	110	
gtg tac atg gac cgc cag aac gtc acc gtt aac atc aag cgg ttc ggc				384
Val Tyr Met Asp Arg Gln Asn Val Thr Val Asn Ile Lys Arg Phe Gly				
	115	120	125	
gag cta ctc agg acg gcg cgg acg cac ctc aag aac acc acg gcg tgc				432
Glu Leu Leu Arg Thr Ala Arg Thr His Leu Lys Asn Thr Thr Ala Cys				
	130	135	140	
gcc gcc gcc gcg gcg ctg agg tag aagatgctag ttgagcttgg tcaggtgcta				486
Ala Ala Ala Ala Ala Leu Arg				
	145	150		
atgacttagt catacttgtc aatttccttg tgttttcgtc gagatcctgt aaatatgatt				546
gggttggttc ttttggtcga gagattggtg gggatcgatc gccttcttct acagtgcatt				606
cgtttggttc atggtgttgc tagagcagaa gcagatgaag aatagtttat ggcaggggca				666
gctgtcctca aacaccttgt tcacactagt tcataggggt agcagctctt tttatttctc				726
ttcaaatttt ctttttggtc ttctcattct ttgggtgtca tgatgatgta taagaaacta				786
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cct cag tca agt gag agg cca ctg act gcc aca agc agt ttc agt tct				95
Pro Gln Ser Ser Glu Arg Pro Leu Thr Ala Thr Ser Ser Phe Ser Ser				
20 25 30				
gca tcc cca ttt tca gaa tca agc cag tta gct tca tct agt aaa caa				143
Ala Ser Pro Phe Ser Glu Ser Ser Gln Leu Ala Ser Ser Ser Lys Gln				
35 40 45				

cca gcc cca tat cta cct cgc aac cat atg ggc agg cgg tct ttc atg	191
Pro Ala Pro Tyr Leu Pro Arg Asn His Met Gly Arg Arg Ser Phe Met	
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tct aaa cca gtc tac cca ctt gtc ttc cgg aat cct gtc tca gaa tca	239
Ser Lys Pro Val Tyr Pro Leu Val Phe Arg Asn Pro Val Ser Glu Ser	
65 70 75	
gaa gcg tgc agg atg ctt gag gtt ggt aat gcc ggg cga gcg aca cca	287
Glu Ala Cys Arg Met Leu Glu Val Gly Asn Ala Gly Arg Ala Thr Pro	
80 85 90 95	
agt gat gac agc caa gct tct cct ctg tgg cgt cgc agc ttg gcg agc	335
Ser Asp Asp Ser Gln Ala Ser Pro Leu Trp Arg Arg Ser Leu Ala Ser	
100 105 110	
cca gat ctc aag ttc cac aat gca ccg aat gaa ctt ggg aag atg gaa	383
Pro Asp Leu Lys Phe His Asn Ala Pro Asn Glu Leu Gly Lys Met Glu	
115 120 125	
acc tca ccc gaa ccg aac aca agc tca aga agg gaa ggg ttc aga tgg	431
Thr Ser Pro Glu Pro Asn Thr Ser Ser Arg Arg Glu Gly Phe Arg Trp	
130 135 140	
agc aac gcc agc agt tat gac ttt gga tac gat gga gat gcc att gac	479
Ser Asn Ala Ser Ser Tyr Asp Phe Gly Tyr Asp Gly Asp Ala Ile Asp	
145 150 155	
att tca gat cat atc agc atc gag tcc cag aga tct ccc acg agc tca	527
Ile Ser Asp His Ile Ser Ile Glu Ser Gln Arg Ser Pro Thr Ser Ser	
160 165 170 175	
gcg agg ttc ctg aag tgt ggg ctg tgc gag aga ttc ctg cac cag aaa	575
Ala Arg Phe Leu Lys Cys Gly Leu Cys Glu Arg Phe Leu His Gln Lys	
180 185 190	
tca ccc tgg acc tcg aac agg att gtt cga aac gcc gac atg cca gtg	623
Ser Pro Trp Thr Ser Asn Arg Ile Val Arg Asn Ala Asp Met Pro Val	
195 200 205	
gca gca gtt ctg cct tgc cga cat gtc ttc cac gcg gat tgc ttg gag	671
Ala Ala Val Leu Pro Cys Arg His Val Phe His Ala Asp Cys Leu Glu	
210 215 220	
gaa agc act gcc aag aca gaa gtc cat gaa cca cct tgc ccc ctg tgc	719
Glu Ser Thr Ala Lys Thr Glu Val His Glu Pro Pro Cys Pro Leu Cys	
225 230 235	
gcg cga gcc act gac gat gaa ggg cac gtg tcg ttc tca gaa cct ctg	767
Ala Arg Ala Thr Asp Asp Glu Gly His Val Ser Phe Ser Glu Pro Leu	
240 245 250 255	
cat gtt gcc ctc cga tct gct cgc agg aac ctt tcg ttg ggc act ggt	815
His Val Ala Leu Arg Ser Ala Arg Arg Asn Leu Ser Leu Gly Thr Gly	
260 265 270	

gct ggt ggg aac agc ggc att tct gac cct cct cgc act gat cgt ggc Ala Gly Gly Asn Ser Gly Ile Ser Asp Pro Pro Arg Thr Asp Arg Gly 275 280 285	863
ttg aag agg aac aac tct gca gtc atg cct agg cgc agc ggc ggc gca Leu Lys Arg Asn Asn Ser Ala Val Met Pro Arg Arg Ser Gly Gly Ala 290 295 300	911
ttg ttc cgc aat cgc ttc aag aaa cag ttc ccc ttc aaa gcg agg atc Leu Phe Arg Asn Arg Phe Lys Lys Gln Phe Pro Phe Lys Ala Arg Ile 305 310 315	959
ggg aag gag ctc ttt ggc ggt agg gtt ctc aac aag gtt gga ttg tct Gly Lys Glu Leu Phe Gly Gly Arg Val Leu Asn Lys Val Gly Leu Ser 320 325 330 335	1007
ttg tct tca ggt cag cat gat gat cat cga cag caa gcg cca aag cat Leu Ser Ser Gly Gln His Asp Asp His Arg Gln Gln Ala Pro Lys His 340 345 350	1055
gac cgg ccc atg aag tag ctagatctta gtggcacaga gtataatatg Asp Arg Pro Met Lys 355	1103
ttgtgtgccc tcctgatatt ttatctatgg catctgttat cgaaacttgg catccatgcg	1163
cagcagtcgt ccaagatggg ggccctgtat ggattatgga aggctgcttg cattgcgtgt	1223
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gcc atg gcc atg gcc agg ttc ctc tcg tgg ttg ttc aca tgc ttc gca Ala Met Ala Met Ala Arg Phe Leu Ser Trp Leu Phe Thr Cys Phe Ala 5 10 15	167
gct ctc gcc gtc ctg gag gcc acg gtc cct gct cgt tca tgg cgc gct Ala Leu Ala Val Leu Glu Ala Thr Val Pro Ala Arg Ser Trp Arg Ala 20 25 30	215

ccg agt ccc acc ccg agg cac gaa gcg agg agg ttc gag cag aag acg Pro Ser Pro Thr Pro Arg His Glu Ala Arg Arg Phe Glu Gln Lys Thr 35 40 45	263
gac agg ttc tgg gag tac cag gag cag agc aat acc tgg gta caa gta Asp Arg Phe Trp Glu Tyr Gln Glu Gln Ser Asn Thr Trp Val Gln Val 50 55 60 65	311
cgc gcg ccg ttc gac ctc atg tcc tgc atc aac ggc acc tgc aca aag Arg Ala Pro Phe Asp Leu Met Ser Cys Ile Asn Gly Thr Cys Thr Lys 70 75 80	359
gta gga tcg atc ggg cgg ctg gcg agg gag cct gga cga cac ggc ctt Val Gly Ser Ile Gly Arg Leu Ala Arg Glu Pro Gly Arg His Gly Leu 85 90 95	407
cct ccc gtc cag agc cag gag gag gag gag gaa gac acg cgg cgg gtt Pro Pro Val Gln Ser Gln Glu Glu Glu Glu Glu Asp Thr Arg Arg Val 100 105 110	455
cag gga gat ggt gca gaa gaa gac cct gtc ctg cct gta agg agg aga Gln Gly Asp Gly Ala Glu Glu Asp Pro Val Leu Pro Val Arg Arg Arg 115 120 125	503
att tcc ttg aca aga atg tca gag tcg tca gtc tgg gtg aca ggg cag Ile Ser Leu Thr Arg Met Ser Glu Ser Ser Val Trp Val Thr Gly Gln 130 135 140 145	551
agc ggc tcc atc tac gag agg ttc tgg aac ggg gtg gtg tgg gtg att Ser Gly Ser Ile Tyr Glu Arg Phe Trp Asn Gly Val Val Trp Val Ile 150 155 160	599
gct cct cat gag ctc cct gcc tcg gct ggg tat gcc acc gca act ttc Ala Pro His Glu Leu Pro Ala Ser Ala Gly Tyr Ala Thr Ala Thr Phe 165 170 175	647
att gtc aat aca act atc ctt gct ctg tct gaa gct gga acc ctc tac Ile Val Asn Thr Thr Ile Leu Ala Leu Ser Glu Ala Gly Thr Leu Tyr 180 185 190	695
cag ttg cag cta aat gag cat gcc cag cct atc tgg aca gag atg gca Gln Leu Gln Leu Asn Glu His Ala Gln Pro Ile Trp Thr Glu Met Ala 195 200 205	743
ttc aac tca agc cag cag tca gcg aat ctt gga tta aaa aca caa agt Phe Asn Ser Ser Gln Gln Ser Ala Asn Leu Gly Leu Lys Thr Gln Ser 210 215 220 225	791
caa gct atg cgt ata aga aat ggg att gta tcc aat gat gga agg aaa Gln Ala Met Arg Ile Arg Asn Gly Ile Val Ser Asn Asp Gly Arg Lys 230 235 240	839
ctt ttc ctg tct atc atg aat gga tcc ctg ctt gag gta aca gaa att Leu Phe Leu Ser Ile Met Asn Gly Ser Leu Leu Glu Val Thr Glu Ile 245 250 255	887

cag Gln	cct Pro	cta Leu 260	agg Arg	tgg Trp	aat Asn	tac Tyr	cat His 265	ggg Gly	cgt Arg	cct Pro	cca Pro	ggt Gly 270	gca Ala	gac Asp	gtg Val	935
tcg Ser	tat Tyr 275	ata Ile	tct Ser	gat Asp	gct Ala	gga Gly 280	aat Asn	ctg Leu	cgg Arg	cca Pro	ggg Gly 285	acc Thr	ctg Leu	ttc Phe	aca Thr	983
gta Val 290	agt Ser	tcc Ser	act Thr	gga Gly	gac Asp 295	ctc Leu	tat Tyr	gag Glu	ttt Phe	gac Asp 300	aaa Lys	gaa Glu	aca Thr	aag Lys	cca Pro 305	1031
tca Ser	tgg Trp	aaa Lys	aag Lys	cat His 310	ata Ile	tgg Trp	agt Ser	gaa Glu	gaa Glu	ctg Leu	gcg Ala	aaa Lys	aat Asn	atc Ile 320	tca Ser	1079
tta Leu	aaa Lys	tca Ser	tcg Ser 325	gct Ala	ggc Gly	ttt Phe	gct Ala	ttg Leu 330	cat His	ggt Gly	ttg Leu	tca Ser 335	ggg Gly	tct Ser	aac Asn	1127
tca Ser	gtg Val 340	tct Ser	ctt Leu	ttc Phe	ctg Leu	ata Ile 345	agc Ser	aag Lys	gat Asp	ggc Gly	ctt Leu	tta Leu 350	gtg Val	gag Glu	cgg Arg	1175
cgc Arg	ttg Leu 355	cat His	aga Arg	agg Arg	aag Lys	tgg Trp 360	aag Lys	tgg Trp	gac Asp	aaa Lys	cat His 365	gga Gly	gct Ala	cct Pro	acg Thr	1223
ggt Gly 370	cag Gln	aga Arg	ctt Leu	agt Ser	tca Ser 375	att Ile	gca Ala	gaa Glu	gtt Val	cag Gln 380	aag Lys	gat Asp	gaa Glu	ctt Leu	aat Asn 385	1271
gat Asp	gcg Ala	act Thr	tca Ser	atg Met 390	ttt Phe	tta Leu	acg Thr	aca Thr	acc Thr 395	aca Thr	gga Gly	aaa Lys	gta Val	tat Tyr 400	gag Glu	1319
tat Tyr	cag Gln	ttt Phe 405	cca Pro	aaa Lys	tat Tyr	aca Thr	ggt Gly	ggg Gly 410	gcc Ala	cag Gln	agc Ser	aat Asn	aag Lys 415	ata Ile	aga Arg	1367
gga Gly	caa Gln 420	tgg Trp	ata Ile	aat Asn	cac His	atg Met	tcc Ser 425	cct Pro	gag Glu	cat His	gca Ala	aag Lys 430	gtt Val	gca Ala	aga Arg	1415
aac Asn 435	gtc Val	cca Pro	ggt Gly	gta Val	cat His	gtt Val 440	caa Gln	gtc Val	ggc Gly	aga Arg	atg Met 445	gta Val	ttc Phe	cca Pro	cta Leu	1463
gat Asp 450	gat Asp	ggt Gly	agg Arg	ctt Leu	ggg Gly 455	gaa Glu	cta Leu	cat His	ttt Phe	cct Pro 460	ggg Gly	atg Met	ggg Gly	ggt Gly	act Thr 465	1511
gat Asp	ttt Phe	ggt Gly	ccg Pro	agt Ser 470	gcc Ala	caa Gln	agt Ser	acc Thr	ata Ile 475	aga Arg	aga Arg	aaa Lys	cta Leu 480	tca Ser	aac Asn	1559
aag	tac	gag	tgg	tcc	atc	cta	gac	gca	cca	gaa	aca	gaa	ggt	tgg	aat	1607

Lys	Tyr	Glu	Trp	Ser	Ile	Leu	Asp	Ala	Pro	Glu	Thr	Glu	Gly	Trp	Asn		
			485					490					495				
gca	gaa	tat	tgc	acc	gaa	gag	cac	ggt	ccg	aca	aat	tgt	att	agt	gga	1655	
Ala	Glu	Tyr	Cys	Thr	Glu	Glu	His	Gly	Pro	Thr	Asn	Cys	Ile	Ser	Gly		
		500					505					510					
gca	aag	aat	ata	gct	gca	gac	aca	gaa	tca	aat	gac	ttg	agc	aat	aac	1703	
Ala	Lys	Asn	Ile	Ala	Ala	Asp	Thr	Glu	Ser	Asn	Asp	Leu	Ser	Asn	Asn		
		515				520					525						
cca	cct	tcc	agg	agg	cgt	aaa	gta	gaa	gag	aag	cag	cac	tac	cta	aat	1751	
Pro	Pro	Ser	Arg	Arg	Arg	Lys	Val	Glu	Glu	Lys	Gln	His	Tyr	Leu	Asn		
530					535					540					545		
gtt	aac	aga	tac	cag	cag	agt	gat	gaa	act	gaa	tca	tac	aac	ttt	cta	1799	
Val	Asn	Arg	Tyr	Gln	Gln	Ser	Asp	Glu	Thr	Glu	Ser	Tyr	Asn	Phe	Leu		
				550					555					560			
tca	agg	acc	att	gat	ctt	aac	ttc	cac	atg	cgg	gtg	atg	cat	gca	gac	1847	
Ser	Arg	Thr	Ile	Asp	Leu	Asn	Phe	His	Met	Arg	Val	Met	His	Ala	Asp		
			565					570					575				
aga	tcg	ctt	ttc	ctt	ata	gca	gac	aat	gga	ttg	act	ttt	gaa	tat	cta	1895	
Arg	Ser	Leu	Phe	Leu	Ile	Ala	Asp	Asn	Gly	Leu	Thr	Phe	Glu	Tyr	Leu		
		580					585					590					
aac	agc	aat	ggt	gtt	tgg	ttg	tgg	tta	aga	cat	gaa	cat	gtt	aca	gcc	1943	
Asn	Ser	Asn	Gly	Val	Trp	Leu	Trp	Leu	Arg	His	Glu	His	Val	Thr	Ala		
		595				600					605						
atg	aaa	gga	aca	cta	gga	agc	tac	aat	ggc	agt	ttg	tat	ctt	gtc	gac	1991	
Met	Lys	Gly	Thr	Leu	Gly	Ser	Tyr	Asn	Gly	Ser	Leu	Tyr	Leu	Val	Asp		
610					615					620					625		
gtg	cat	ggg	aac	tta	cac	att	aga	gaa	aga	aat	gga	gat	gaa	ctg	ttg	2039	
Val	His	Gly	Asn	Leu	His	Ile	Arg	Glu	Arg	Asn	Gly	Asp	Glu	Leu	Leu		
				630					635					640			
tgg	att	aac	tgc	aca	gcg	atg	aag	aag	gga	aga	cag	gtt	gca	agt	ggg	2087	
Trp	Ile	Asn	Cys	Thr	Ala	Met	Lys	Lys	Gly	Arg	Gln	Val	Ala	Ser	Gly		
			645					650					655				
tct	cca	tgg	gat	ggc	atc	cct	ggt	tta	ttg	cgc	aga	gtg	aca	aca	gat	2135	
Ser	Pro	Trp	Asp	Gly	Ile	Pro	Gly	Leu	Leu	Arg	Arg	Val	Thr	Thr	Asp		
		660					665					670					
gat	gca	ctc	ttc	ttt	gtc	aac	aag	cga	ggc	agg	ctg	cta	cag	ttc	acg	2183	
Asp	Ala	Leu	Phe	Phe	Val	Asn	Lys	Arg	Gly	Arg	Leu	Leu	Gln	Phe	Thr		
		675				680					685						
gtt	gcg	ctg	cgg	aaa	ttc	aag	tgg	aag	gac	tgc	cac	agt	cct	cct	gac	2231	
Val	Ala	Leu	Arg	Lys	Phe	Lys	Trp	Lys	Asp	Cys	His	Ser	Pro	Pro	Asp		
690					695					700					705		
acc	aag	att	gct	ttc	ata	gtg	gac	cag	gag	gtc	ttc	aga	aga	aac	atc	2279	
Thr	Lys	Ile	Ala	Phe	Ile	Val	Asp	Gln	Glu	Val	Phe	Arg	Arg	Asn	Ile		

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 Phe Gly His Pro Thr Asp Lys Gln Met Ile Glu Leu Asp Gln Ala Leu
 20 25 30

tca cag tgg aat act gac ttt gac aag gtt cca gtg aca aaa atc gca 145
 Ser Gln Trp Asn Thr Asp Phe Asp Lys Val Pro Val Thr Lys Ile Ala
 35 40 45

ttt ggg cac ttc ccg ttg tct ttc tca gca tta aca gag tca gga aaa 193
 Phe Gly His Phe Pro Leu Ser Phe Ser Ala Leu Thr Glu Ser Gly Lys
 50 55 60

agt atc aag gat gtt ttt cta aag caa tca ttg gca gca tat ttg tgt 241
 Ser Ile Lys Asp Val Phe Leu Lys Gln Ser Leu Ala Ala Tyr Leu Cys
 65 70 75 80

ggc cat ctt cat aca agg ttc ggg aag aac ttg aaa cga tac tac cat 289
 Gly His Leu His Thr Arg Phe Gly Lys Asn Leu Lys Arg Tyr Tyr His
 85 90 95

cgg gca gtc cag gaa tca tca tta tca gag cat tac tac caa cat aac 337
 Arg Ala Val Gln Glu Ser Ser Leu Ser Glu His Tyr Tyr Gln His Asn
 100 105 110

atg cac caa gga gat gca ttc cag ggt aat aag gaa aac tgt tct gaa 385
 Met His Gln Gly Asp Ala Phe Gln Gly Asn Lys Glu Asn Cys Ser Glu
 115 120 125

gaa gct tct cat att gaa gag ttc tgg gaa tgg gag atg ggt gat tgg	433
Glu Ala Ser His Ile Glu Glu Phe Trp Glu Trp Glu Met Gly Asp Trp	
130 135 140	
aga aag agc aga agc atg agg ata cta gca att gat gat ggt tat gtt	481
Arg Lys Ser Arg Ser Met Arg Ile Leu Ala Ile Asp Asp Gly Tyr Val	
145 150 155 160	
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Ser Tyr Thr Asp Ile Asp Phe Arg Leu Gly Ser Lys Ser Ile Ile Ile	
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Leu Pro Thr Phe Pro Leu Asp Ser Arg Phe Met Gln Arg Ala Ser Ala	
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Phe Arg Asp Phe Lys Cys His Val Met Gly Ala Ser Ser Phe Asp Thr	
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gtg aga gct ctt gta ttc tct aaa cat gag ata ata tct gtt tct gta	673
Val Arg Ala Leu Val Phe Ser Lys His Glu Ile Ile Ser Val Ser Val	
210 215 220	
aaa ata tac gac tca agg cca gga act ctt gaa ata gtc ttt gac tct	721
Lys Ile Tyr Asp Ser Arg Pro Gly Thr Leu Glu Ile Val Phe Asp Ser	
225 230 235 240	
gaa atg aaa aga gtg gat tcc aat gaa act cga gga aat atg tat ttg	769
Glu Met Lys Arg Val Asp Ser Asn Glu Thr Arg Gly Asn Met Tyr Leu	
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Ile Pro Trp Asn Trp Arg Ala Phe Glu Asp Ser Ser Pro Ser Arg Tyr	
260 265 270	
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Trp Leu Gln Ile Glu Val Met Asp Ile Thr Gly Asp Thr Ser Val Ser	
275 280 285	
cag ttg agg cca ttc tct gtt aac ggc ttg ccg gca aga gtg aac tgg	913
Gln Leu Arg Pro Phe Ser Val Asn Gly Leu Pro Ala Arg Val Asn Trp	
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aca tgg aaa gag ttt ttt gtg att ggt att cag tgg gct tca ata tat	961
Thr Trp Lys Glu Phe Phe Val Ile Gly Ile Gln Trp Ala Ser Ile Tyr	
305 310 315 320	
cat cct gca ctg tgg tgt gcc ttt tct cta atc ttt tcg ttg ctt ctt	1009
His Pro Ala Leu Trp Cys Ala Phe Ser Leu Ile Phe Ser Leu Leu Leu	
325 330 335	
gta cca caa gtt tta gca gtg gta ttc aaa gat cgg ttc aca tat aaa	1057
Val Pro Gln Val Leu Ala Val Val Phe Lys Asp Arg Phe Thr Tyr Lys	
340 345 350	
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Ser	Leu	Cys	Ala	Tyr	Gly	Gly	Gln	Arg	Thr	Leu	Leu	Lys	Ser	Leu	Val	
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Gly	Gly	Phe	Ile	Cys	Cys	Phe	Val	Glu	Leu	Ser	Arg	Leu	Val	Leu	Val	
	370					375					380					
tgg	tta	ttg	cta	ctg	tta	tat	gct	atc	tat	tta	ggt	ttt	ata	cct	tgg	1201
Trp	Leu	Leu	Leu	Leu	Leu	Tyr	Ala	Ile	Tyr	Leu	Val	Phe	Ile	Pro	Trp	
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tta	ttc	ggt	cac	cct	att	act	gaa	gat	ggt	agc	ctg	act	tac	atg	aca	1249
Leu	Phe	Gly	His	Pro	Ile	Thr	Glu	Asp	Gly	Ser	Leu	Thr	Tyr	Met	Thr	
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cat	aaa	ggc	tgg	att	cta	aaa	gga	ccc	agt	agt	agc	aac	gaa	gta	gtc	1297
His	Lys	Gly	Trp	Ile	Leu	Lys	Gly	Pro	Ser	Ser	Ser	Asn	Glu	Val	Val	
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His	Ala	Gly	Ile	Pro	Asp	Val	Met	Val	Ile	Val	Leu	Pro	His	Leu	Cys	
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Phe	Val	Leu	Val	Pro	Thr	Ile	Val	Ile	Leu	Ala	Ala	Met	Ala	Ala	Glu	
	450					455					460					
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Arg	Thr	Ala	Tyr	Arg	Glu	His	Tyr	Leu	Ser	Arg	Ser	Gly	Lys	Lys	Lys	
465					470					475					480	
gat	gac	tac	cgt	aag	agc	agg	aca	cag	ata	gaa	cat	gaa	aac	ttt	tgg	1489
Asp	Asp	Tyr	Arg	Lys	Ser	Arg	Thr	Gln	Ile	Glu	His	Glu	Asn	Phe	Trp	
				485				490						495		
aac	ggt	cgc	tgg	att	agc	aaa	ttt	ctg	tgt	ctt	ctc	tgc	gtg	gtg	ggt	1537
Asn	Gly	Arg	Trp	Ile	Ser	Lys	Phe	Leu	Cys	Leu	Leu	Cys	Val	Val	Val	
			500					505					510			
cta	tgc	aaa	cat	tgg	aag	ctt	tgc	aga	gcg	ctc	gtg	aag	gct	tat	gct	1585
Leu	Cys	Lys	His	Trp	Lys	Leu	Cys	Arg	Ala	Leu	Val	Lys	Ala	Tyr	Ala	
		515					520					525				
atg	aac	ccc	ttg	ctc	cat	gcg	cca	gta	ctt	ttc	ttc	ttc	ggt	cct	tta	1633
Met	Asn	Pro	Leu	Leu	His	Ala	Pro	Val	Leu	Phe	Phe	Phe	Val	Pro	Leu	
	530					535					540					
ctc	atg	gtg	ttt	gcc	atc	tac	aag	aca	cgg	tcc	att	tag	ctgttcg	ggga		1682
Leu	Met	Val	Phe	Ala	Ile	Tyr	Lys	Thr	Arg	Ser	Ile					
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gttctgaaga	tgtgctgcac	tggactgtcc	aataaatggt	gctccaactg	tgaagactga											1742
agactaacc	acaactgaag	gtgtgctact	tcgatttctc	aatttctctc	tttcagagag											1802
cagatttggt	agattgttta	acaggcatat	atagctttca	gcattgcgct	ccgtataaat											1862

gagggactgc acggcatttc attagaatgg aatagttagg atttggacca aggaggaaga 1922
gactaaactg ctcaatatag tttttcctct ttcttttgag aaagttcttt ttcccagctc 1982
tgtttttgac ctgccggctt tgtttttcta catttatcct tcttgtgaga ctttgaccat 2042
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aactccacaa gatctagaac ctaagaacct gcagaggaga ggaagaggag cttggggagg 180
ag atg gcc ggc gcc gag ggc gag agg tgg gtg ggg cta gca acg gac 227
Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp
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ttc tcg gag ggg agc cgg gcg gcg ctg cgg tgg gcg gcg gcc aac ctg 275
Phe Ser Glu Gly Ser Arg Ala Ala Leu Arg Trp Ala Ala Ala Asn Leu
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ctg cga gcc ggc gac cac ctg ctg ctg ctg cac gtc atc aag gag ccc 323
Leu Arg Ala Gly Asp His Leu Leu Leu Leu His Val Ile Lys Glu Pro
35 40 45
gac tac gag cag agc gag gcc atc ctc tgg gaa tcc acc ggc tcc ccg 371
Asp Tyr Glu Gln Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro
50 55 60
ttg att ccc ctc tcg gaa ttc tct gac cct atc att gcg aag aaa tat 419
Leu Ile Pro Leu Ser Glu Phe Ser Asp Pro Ile Ile Ala Lys Lys Tyr
65 70 75
gga gca aag ccg gac ata gaa acc ttg gac atc ctg aac act aca gct 467
Gly Ala Lys Pro Asp Ile Glu Thr Leu Asp Ile Leu Asn Thr Thr Ala
80 85 90 95
acc cag aag gat atc gtg gtg gtt gtg aaa gtc ctg tgg ggt gat ccg 515
Thr Gln Lys Asp Ile Val Val Val Val Lys Val Leu Trp Gly Asp Pro
100 105 110
cgt gag aag ctc tgt caa gtt atc cat gat acc ccg ctg agc tgc ttg 563

Arg	Glu	Lys	Leu	Cys	Gln	Val	Ile	His	Asp	Thr	Pro	Leu	Ser	Cys	Leu		
			115					120					125				
gtt	ata	gga	agc	agg	ggc	ctt	ggc	aag	ctc	aag	agg	gtg	ctc	ttg	gga	611	
Val	Ile	Gly	Ser	Arg	Gly	Leu	Gly	Lys	Leu	Lys	Arg	Val	Leu	Leu	Gly		
		130					135					140					
agt	gtc	agc	gac	tat	gtt	gtg	aac	aat	gca	acc	tgc	cct	gtc	acc	gtc	659	
Ser	Val	Ser	Asp	Tyr	Val	Val	Asn	Asn	Ala	Thr	Cys	Pro	Val	Thr	Val		
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gtc	aag	tca	aca	agc	acc	gaa	ggc	tga	tcttatcgcc	gagatgcctg						706	
Val	Lys	Ser	Thr	Ser	Thr	Glu	Gly										
						160											
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	Gln	Thr	Arg	Ala	Tyr	Leu	Ser	Asn	Val	Cys	Val	Ala	Lys	Glu	Leu		
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cag	aaa	aaa	ggc	tta	ggc	tat	aca	tta	gtt	gac	aaa	tcc	aag	aaa	tta	455	
Gln	Lys	Lys	Gly	Leu	Gly	Tyr	Thr	Leu	Val	Asp	Lys	Ser	Lys	Lys	Leu		
				20					25						30		
gct	ctt	gaa	tgg	ggc	ata	aca	gat	ctg	tat	gtt	cat	gtc	gcc	atc	aac	503	
Ala	Leu	Glu	Trp	Gly	Ile	Thr	Asp	Leu	Tyr	Val	His	Val	Ala	Ile	Asn		

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Asn Val Ala Gly Gln Lys Leu Tyr Lys Lys Cys Gly Phe Val Tyr Glu				
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ggc gaa gaa cct gca tgg aag ggt agg ttt ctg ggg aga cca agg agg				599
Gly Glu Glu Pro Ala Trp Lys Gly Arg Phe Leu Gly Arg Pro Arg Arg				
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agacctggcc agcccaggcg tggaggtgct cgtctcctcc gccgcgccgg gaccggcg				178
atg aac ggc ggg ctc cct gga ttc cac aat gcg ccg gcg tca aag gcc				226
Met Asn Gly Gly Leu Pro Gly Phe His Asn Ala Pro Ala Ser Lys Ala				
1 5 10 15				
gtg gtc gtc gcc gca ggt ctc ttc tcc gtc gcc ttt ggc ttc cgc ggc				274
Val Val Val Ala Ala Gly Leu Phe Ser Val Ala Phe Gly Phe Arg Gly				
20 25 30				
cac tcc ctc aac ctc ggc ctt gcc tac cag agt gtt tat gaa aag ctg				322
His Ser Leu Asn Leu Gly Leu Ala Tyr Gln Ser Val Tyr Glu Lys Leu				
35 40 45				
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Ser Val Trp Arg Leu Ile Thr Ser Phe Phe Ala Phe Ser Ser Thr Pro				
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Glu Leu Ile Phe Gly Ala Val Leu Leu Tyr Tyr Phe Arg Val Phe Glu				
65 70 75 80				
cga caa ata ggt tct aac aag tat gct gtc ttc att atc ttc tca acc				466
Arg Gln Ile Gly Ser Asn Lys Tyr Ala Val Phe Ile Ile Phe Ser Thr				
85 90 95				

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Met Val Ser Val Leu Leu Gln Ile Leu Ala Leu Gly Tyr Met Lys Asp	
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Pro Ser Leu Asn Pro Leu Thr Ser Gly Pro Tyr Gly Leu Ile Phe Ala	
115 120 125	
tct tat gtg cca ttc ttc ttt gac att cca atc tca atg aag ttt cgc	610
Ser Tyr Val Pro Phe Phe Phe Asp Ile Pro Ile Ser Met Lys Phe Arg	
130 135 140	
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Ile Phe Gly Leu Ser Phe Ser Asp Lys Ser Phe Val Tyr Leu Ala Gly	
145 150 155 160	
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Leu Gln Leu Leu Phe Ser Ser Gly Arg Arg Ser Ile Val Pro Gly Leu	
165 170 175	
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Ser Gly Ile Leu Ala Gly Leu Leu Tyr Arg Leu Asn Thr Phe Gly Val	
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Arg Arg Leu Lys Phe Pro Glu Phe Ala Thr Ser Leu Phe Ser Gln Leu	
195 200 205	
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Ser Leu Pro Phe Ser Ser Asn Pro Tyr Gln Gly Leu Pro Ile Thr Glu	
210 215 220	
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Asn Asp Gly Ser Ile Pro Ser His Gln Ala Arg Gln Ile Glu Asp Ala	
225 230 235 240	
cgc aca gct acc caa gat cct acg gag tct tct att gcc gca ctg gtg	946
Arg Thr Ala Thr Gln Asp Pro Thr Glu Ser Ser Ile Ala Ala Leu Val	
245 250 255	
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Ser Met Gly Phe Asp Arg Ser Ala Ala Ile Gln Ala Leu Ala Leu Thr	
260 265 270	
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Asn Tyr Asp Val Asn Leu Ala Ser Asn Ile Leu Leu Glu Ala Gln Ala	
275 280 285	
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Leu Gln Gln	
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 His Tyr Leu Thr Ala Thr Gly Pro Ala Ile Ala Ile Phe Thr Asn Pro
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acc aaa caa ggc tat gac gac gga ctg ggc gaa aaa atc att ggc acg 143
 Thr Lys Gln Gly Tyr Asp Asp Gly Leu Gly Glu Lys Ile Ile Gly Thr
 35 40 45

ttt ggc aac tgt gct ggg gga aca acc ccc tgg ggg aca gtg tta agc 191
 Phe Gly Asn Cys Ala Gly Gly Thr Thr Pro Trp Gly Thr Val Leu Ser
 50 55 60

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 Ala Glu Glu Asn Phe Gln Ser Gln Val Pro Glu Ala Val Tyr Ala Asp
 65 70 75

ggc tcc gcc gta gat ccg gcc caa tgt ccg ctt aaa ata agt acc aac 287
 Gly Ser Ala Val Asp Pro Ala Gln Cys Pro Leu Lys Ile Ser Thr Asn
 80 85 90 95

ggg ttg agt ggc caa ggc aat gtg ttt ggc ttg gcg ggc aat aaa tat 335
 Gly Leu Ser Gly Gln Gly Asn Val Phe Gly Leu Ala Gly Asn Lys Tyr
 100 105 110

ggc tgg atg gta gaa att gac ccg gcc aat gcc aac gat tac ggc gtc 383
 Gly Trp Met Val Glu Ile Asp Pro Ala Asn Ala Asn Asp Tyr Gly Val
 115 120 125

aaa cat acg gcc ctt gga cgc ttt cgc cat gaa gct gtg gcg gtg cgg 431
 Lys His Thr Ala Leu Gly Arg Phe Arg His Glu Ala Val Ala Val Arg
 130 135 140

gca aca gcg aat caa ccc ttg gcg gtg tat tcg ggc tgt gat cgc act	479
Ala Thr Ala Asn Gln Pro Leu Ala Val Tyr Ser Gly Cys Asp Arg Thr	
145 150 155	
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Ser Gly His Leu Tyr Lys Phe Val Ser Ala Asp Thr Val Lys Ser Pro	
160 165 170 175	
acc gat aaa ggc aat tcc cgt tta ttt act gcc gga acg ctc tat ggg	575
Thr Asp Lys Gly Asn Ser Arg Leu Phe Thr Ala Gly Thr Leu Tyr Gly	
180 185 190	
gcg aaa ttt aac gcc gat ggt acc ggg gaa tgg att gcc tta acc cct	623
Ala Lys Phe Asn Ala Asp Gly Thr Gly Glu Trp Ile Ala Leu Thr Pro	
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gat acc gta gta aat cct gtt cgt cct agc gat att gct gtt gat agt	671
Asp Thr Val Val Asn Pro Val Arg Pro Ser Asp Ile Ala Val Asp Ser	
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Gly Ala Met Val Pro Ala Ala Gly Arg Gly Ile Ala Trp Ala Asn Gly	
20 25 30	
ggc ccc cgg ttc ggc gac atg gtc tgg gcc aag gtg aag tcc cat ccg	144
Gly Pro Arg Phe Gly Asp Met Val Trp Ala Lys Val Lys Ser His Pro	
35 40 45	
tgg tgg cct ggc cat atc tac agc gtc agc ctc acc gac gac gag gag	192
Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu	
50 55 60	
gta cac cgc ggc cac cgc gac ggg ctc gtc ctc gtc gcc ttc ttc ggt	240
Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly	
65 70 75 80	
gac tcg agc tat ggg tgg ttt gac ccc agc gag ctc gtc ccc ttc gag	288

Asp	Ser	Ser	Tyr	Gly	Trp	Phe	Asp	Pro	Ser	Glu	Leu	Val	Pro	Phe	Glu	
				85					90					95		
gac	cac	ttc	acc	gag	aag	gcg	gcc	cag	ggc	ggc	agc	tcc	cgc	agc	agc	336
Asp	His	Phe	Thr	Glu	Lys	Ala	Ala	Gln	Gly	Gly	Ser	Ser	Arg	Ser	Ser	
			100					105					110			
ttt	gcc	gcc	gcc	gtg	gcc	gag	gcc	gtc	gac	gag	gta	gcc	cgc	cgc	agc	384
Phe	Ala	Ala	Ala	Val	Ala	Glu	Ala	Val	Asp	Glu	Val	Ala	Arg	Arg	Ser	
			115					120				125				
gcg	ctg	gcg	ctg	ctc	tgc	cct	tgc	gac	att	cct	gac	gcc	ttc	cgt	ccc	432
Ala	Leu	Ala	Leu	Leu	Cys	Pro	Cys	Asp	Ile	Pro	Asp	Ala	Phe	Arg	Pro	
			130					135				140				
cac	ccc	agc	gac	ggc	aac	ttc	ttc	ctg	gtc	gac	gtc	ccg	gca	ttc	gac	480
His	Pro	Ser	Asp	Gly	Asn	Phe	Phe	Leu	Val	Asp	Val	Pro	Ala	Phe	Asp	
					150					155					160	
acc	gac	gct	gac	tac	caa	ctc	gac	cag	atc	cgg	gcc	gca	cgg	cag	cga	528
Thr	Asp	Ala	Asp	Tyr	Gln	Leu	Asp	Gln	Ile	Arg	Ala	Ala	Arg	Gln	Arg	
				165					170					175		
ttc	gtg	ccg	cgg	aag	gcg	ctc	aac	tac	ctg	ctg	gac	gcc	gcc	gtg	act	576
Phe	Val	Pro	Arg	Lys	Ala	Leu	Asn	Tyr	Leu	Leu	Asp	Ala	Ala	Val	Thr	
			180					185						190		
cag	cga	gac	gcg	gcg	gaa	aaa	gcc	gcg	cgc	acc	gtg	cct	ggg	atg	gag	624
Gln	Arg	Asp	Ala	Ala	Glu	Lys	Ala	Ala	Arg	Thr	Val	Pro	Gly	Met	Glu	
			195					200					205			
atg	gcc	gcg	ctg	ttc	ttg	gcg	tac	cgc	cgc	gcg	gtg	ttt	tcg	ccg	ata	672
Met	Ala	Ala	Leu	Phe	Leu	Ala	Tyr	Arg	Arg	Ala	Val	Phe	Ser	Pro	Ile	
			210					215				220				
gac	aac	acc	tac	gcc	caa	gct	ttc	ggg	gtg	gat	cct	gag	ctg	gct	ctt	720
Asp	Asn	Thr	Tyr	Ala	Gln	Ala	Phe	Gly	Val	Asp	Pro	Glu	Leu	Ala	Leu	
					230					235					240	
gct	gcc	gag	cag	aaa	gcc	gcg	gca	gag	aga	gct	caa	cga	ggt	atc	aac	768
Ala	Ala	Glu	Gln	Lys	Ala	Ala	Ala	Glu	Arg	Ala	Gln	Arg	Gly	Ile	Asn	
				245					250					255		
aac	act	cac	atg	ctc	aat	tct	agc	tgt	act	gtt	gtt	ctt	gtt	act	gtg	816
Asn	Thr	His	Met	Leu	Asn	Ser	Ser	Cys	Thr	Val	Val	Leu	Val	Thr	Val	
			260					265					270			
tac	ttg	aaa	ttg	atg	ggt	aaa	caa	tgt	tcc	tac	tgc	ttt	tat	aga	tca	864
Tyr	Leu	Lys	Leu	Met	Gly	Lys	Gln	Cys	Ser	Tyr	Cys	Phe	Tyr	Arg	Ser	
			275					280				285				
agc	aac	aat	tat	ttt	gat	gtg	aat	aac	gga	gtg	gat	ctg	att	caa	ata	912
Ser	Asn	Asn	Tyr	Phe	Asp	Val	Asn	Asn	Gly	Val	Asp	Leu	Ile	Gln	Ile	
			290					295				300				
gtt	tct	att	tca	ctt	ctg	ttt	aac	tgt	tgg	ttg	cat	ttt	ttt	tat	caa	960
Val	Ser	Ile	Ser	Leu	Leu	Phe	Asn	Cys	Trp	Leu	His	Phe	Phe	Tyr	Gln	

	35					40					45					
agt tct gct aca tta cag tct caa ggt ggc cac agt ttg ccc tca cag Ser Ser Ala Thr Leu Gln Ser Gln Gly Gly His Ser Leu Pro Ser Gln 50 55 60	193															
aca aac cag caa ctg tat cag cca gag cag tat tat gtg ccc caa aac Thr Asn Gln Gln Leu Tyr Gln Pro Glu Gln Tyr Tyr Val Pro Gln Asn 65 70 75 80	241															
aac tat ggt cca tta gtt cca gtt agc cat tct aac ctt caa atc agc Asn Tyr Gly Pro Leu Val Pro Val Ser His Ser Asn Leu Gln Ile Ser 85 90 95	289															
aac act aac aac ccc acc ctt acc atc cca caa gtg aac cct gga cct Asn Thr Asn Asn Pro Thr Leu Thr Ile Pro Gln Val Asn Pro Gly Pro 100 105 110	337															
cca aca aat aat cag att ggg aat ttg gcc cag cca cag cat tct atg Pro Thr Asn Asn Gln Ile Gly Asn Leu Ala Gln Pro Gln His Ser Met 115 120 125	385															
cca ctg cat gtt gat aga gca agt cag gat ttc tct tct cag ggg caa Pro Leu His Val Asp Arg Ala Ser Gln Asp Phe Ser Ser Gln Gly Gln 130 135 140	433															
caa caa aat cgt ggt cct ggt gct gca caa gct ccc gag gag gat aaa Gln Gln Asn Arg Gly Pro Gly Ala Ala Gln Ala Pro Glu Glu Asp Lys 145 150 155 160	481															
agc aag aag tac cag gcg aca ctc cag tta gct caa aac cta ctg ctt Ser Lys Lys Tyr Gln Ala Thr Leu Gln Leu Ala Gln Asn Leu Leu Leu 165 170 175	529															
cag tta cag cag cgt gga tct gga aat caa tcc tga gacctaat Gln Leu Gln Gln Arg Gly Ser Gly Asn Gln Ser 180 185	575															
ttgcttcagg taccctcgtc tcgtctcagc tggtcgcaaa caactgaaaa tatatatccc	635															
aactcgacgg cttegcctcc actctacaat cgaagcggcc catggtgtgt cagctcgttg	695															
gcctacacct acttgccccca gttctccctt ttcaaggaca tacattacca gaaaacgatt	755															
tctttttctc ctttttatatt tatcgtgtat ttgatatgga taatccggcc tgaattttgt	815															
actcgtttgt tagtatggcc tcgtgttatg ttgttattta ctctgaaacc atatgttatt	875															
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<212>	DNA
<213>	Zea mays

<221> CDS
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<400> 42

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His Ala Ser Asp Pro Thr Glu Phe Ile Leu Glu Thr Leu Glu Gln Ser	
1 5 10 15	
gat cca caa tca ttg ata caa tat ctt gct tac caa gat ttg tgt gtg	97
Asp Pro Gln Ser Leu Ile Gln Tyr Leu Ala Tyr Gln Asp Leu Cys Val	
20 25 30	
gta tct gag tgt aac ttg gaa ccg tgg cgc aga gct gct ttc ttt gag	145
Val Ser Glu Cys Asn Leu Glu Pro Trp Arg Arg Ala Ala Phe Phe Glu	
35 40 45	
gaa tct ggt gaa act tat aga aga att gtg aca gct tgt ttg aag cca	193
Glu Ser Gly Glu Thr Tyr Arg Arg Ile Val Thr Ala Cys Leu Lys Pro	
50 55 60	
ctt gag gag ttt act tca aaa att gct gaa gcc ctt gaa ggt ttt tct	241
Leu Glu Glu Phe Thr Ser Lys Ile Ala Glu Ala Leu Glu Gly Phe Ser	
65 70 75 80	
agt gat cag cca gaa ttg atg cta caa cag tcc aga ctc ttt agt gca	289
Ser Asp Gln Pro Glu Leu Met Leu Gln Gln Ser Arg Leu Phe Ser Ala	
85 90 95	
ttt gat gat tcc cag ata tgc aca tgg tgt gct agg aca ctg gct gga	337
Phe Asp Asp Ser Gln Ile Cys Thr Trp Cys Ala Arg Thr Leu Ala Gly	
100 105 110	
tta act gca cgc tca cgc aag gag gat cga tat ggt gtt gct caa ctg	385
Leu Thr Ala Arg Ser Arg Lys Glu Asp Arg Tyr Gly Val Ala Gln Leu	
115 120 125	
act ggc tgc aat gcc gct gtg atg aca aca ttg ctg tct gcc cta gta	433
Thr Gly Cys Asn Ala Ala Val Met Thr Thr Leu Leu Ser Ala Leu Val	
130 135 140	
gca atc gag aca tgt tta gga aag aaa aca aac cca cag cct gtg cgc	481
Ala Ile Glu Thr Cys Leu Gly Lys Lys Thr Asn Pro Gln Pro Val Arg	
145 150 155 160	
tca ctg gga cct gaa aac att agg tgg act aac ctc tcc aca gga cga	529
Ser Leu Gly Pro Glu Asn Ile Arg Trp Thr Asn Leu Ser Thr Gly Arg	
165 170 175	
aaa ggc aat gga gtt gca att gca agc aca caa aaa agt ggc ctg cac	577
Lys Gly Asn Gly Val Ala Ile Ala Ser Thr Gln Lys Ser Gly Leu His	
180 185 190	
aag aaa gct tat atc atg gca gat gtt ctt cgg act tct gtt tat cat	625
Lys Lys Ala Tyr Ile Met Ala Asp Val Leu Arg Thr Ser Val Tyr His	
195 200 205	

ata ctt tca gca ttc att gat gac ctg caa gct aat gca aaa cca tcc	673
Ile Leu Ser Ala Phe Ile Asp Asp Leu Gln Ala Asn Ala Lys Pro Ser	
210 215 220	

agc tta gag aag aac tgg atc agt gaa ggg aga aag cct gta tat ggt	721
Ser Leu Glu Lys Asn Trp Ile Ser Glu Gly Arg Lys Pro Val Tyr Gly	
225 230 235 240	

tca caa gcc gtg ttg gtt cag aag ttg att ctg ttt att gag tac cga	769
Ser Gln Ala Val Leu Val Gln Lys Leu Ile Leu Phe Ile Glu Tyr Arg	
245 250 255	

gct gta tga acttggttcc atgtctctca gatcctttgc ctgcacatca	818
Ala Val	

gatcatactt ggatggaagt gtttttagttc tcgaacttgg ttgaagaacc tttgctttcc	878
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accagagcct ataaagatgc atcgtaaact aacagtttca ccagagccta taaagatgca	938
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tcgtaaaacta acagtttctc aatatggact tctggcttct gtattcctgt gggctggtgc	998
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actgcggaag gcaccgccgc tcaggccttg tttcgagtct ggttatccac tcaggccttc	1058
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tattctgact tgtactttga aagttgaata gagttacctg tgttgtagca tggagatggt	1118
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atgtgaaaga tttgcgattt ttgatatcca cgtaccaa at agatttatga cacagactgt	1178
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tagtactgtc taactacacc ttggaacgag gggcatattc aggccctgtt tgggaacata	1238
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gtttttaaaa accacattat tatgatatca tgggtgtttca attgtcgtgc tgtaaccatg	1298
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aattgtaatt tcaattgaac acctgtttgt agacagtatt ttggtttagca tgggttttgga	1358
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tc	1360
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<213>	Zea mays

<220>	
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<222>	(2) .. (868)

<400>	43
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Gly Leu Glu Glu Glu Asp Gly Glu Glu Ala Ala Pro Ala Ser Pro Trp	
1 5 10 15	

gcg gag gct gac gcg caa gcc ggt ggc gcg gag gca cag acc gag gtg	97
Ala Glu Ala Asp Ala Gln Ala Gly Gly Ala Glu Ala Gln Thr Glu Val	
20 25 30	

ctc ggc gcc ggc gag cct gat ctc gag agc aag atc gtg gcc atc agg	145
Leu Gly Ala Gly Glu Pro Asp Leu Glu Ser Lys Ile Val Ala Ile Arg	

35	40	45	
gac ttc ttg gag gac cct aat cag ccc gag aac gag ctg gtg agc ttg Asp Phe Leu Glu Asp Pro Asn Gln Pro Glu Asn Glu Leu Val Ser Leu 50 55 60			193
ctg cag aac ctg gca gac atg gat gtt acc tac aac gca ctc cag gag Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu 65 70 75 80			241
act gac atc ggg cgg cag gtt aat ggt ctg cgc aag cat cct tcg gcc Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala 85 90 95			289
gag gtc agg cgg ctg gtg aag cag ctc atc agg aag tgg aag gag ata Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile 100 105 110			337
gtg gac gac tgg gtg cgc ctg gac aat tcc ggc ggt gac ggc agt gcc Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala 115 120 125			385
tct gtt atg act gat ggt gac tcc cca cat aaa atc caa ggc aga agc Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser 130 135 140			433
cac caa agc cct cgg gtt tcg ggg ttt cag tat tct cca agc cca cag His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln 145 150 155 160			481
agg ttt aat ggt tca act tca gag atg gct aac aat ggg ttt gag tca Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser 165 170 175			529
aca atg gat gcg aag cgt agg gcc agc cct gta cca gca cat cat aac Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn 180 185 190			577
tcc agg cag atg aac aac aat cat cat tct act act att acc acc agc Ser Arg Gln Met Asn Asn Asn His His Ser Thr Thr Ile Thr Thr Ser 195 200 205			625
acg tca tct gct cca gct ttc tcg gtg cag aaa gtg aca agg gag caa Thr Ser Ser Ala Pro Ala Phe Ser Val Gln Lys Val Thr Arg Glu Gln 210 215 220			673
aag cag agt ctt gtg gac ctt gac agg ctt gat tct gcc agg aag agg Lys Gln Ser Leu Val Asp Leu Asp Arg Leu Asp Ser Ala Arg Lys Arg 225 230 235 240			721
ctc cag gag aat tac caa gaa gca caa aat gcc aaa aag cag agg aca Leu Gln Glu Asn Tyr Gln Glu Ala Gln Asn Ala Lys Lys Gln Arg Thr 245 250 255			769
atc caa gtg atg gac atc aat gac ata cca aag ccg aag agc aga aac Ile Gln Val Met Asp Ile Asn Asp Ile Pro Lys Pro Lys Ser Arg Asn 260 265 270			817

gct ttc atc cgc aag agc ggc agc ggt ggg ctc ccg gcg agg cac cga 865
 Ala Phe Ile Arg Lys Ser Gly Ser Gly Gly Leu Pro Ala Arg His Arg
 275 280 285

tag cctaacctcc ttcgtcggct ggatatctgc gacacttgcg aagttgtgcc 918

ctagaaccgc aacgggaaag aaaaagaagc aaacgggttc ttgttctttt tttccctgta 978

ccttgactgc ctaggtttac ctccagtgta atattgtcag gtacataagg gtgaaatgat 1038

atgatgtttc tcgaggaaaa agaaagaaat tagtcactgt ttttgctatg gtttggttgc 1098

tgttattgct gttggtcagt gctggatata atatgcataa aatgtatcaa gcctgcacac 1158

at 1160

<210> 44
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 <212> PRT
 <213> Zea mays

<400> 44

Phe Cys Glu Cys Ile Phe Val Val Leu Gln Gln Gln Gly Pro Asp Tyr
 1 5 10 15

Met Val Arg Asn Ala Arg Arg Ser Met Leu Glu Glu Leu Glu Gly Met
 20 25 30

Leu Glu Ile Val Glu Pro Gln Pro Pro Gly Lys Pro Arg Thr Leu Ser
 35 40 45

Arg Arg Arg Phe Asp Leu Pro Glu Gly Val Ala Ile Glu Lys Glu
 50 55 60

<210> 45
 <211> 473
 <212> PRT
 <213> Zea mays

<400> 45

Met Ala Lys Thr Pro Ser Phe Ala Val Ala Ala Val Ala Gly Gly Arg
 1 5 10 15

Gly Pro Val His Asn Arg Thr Gln Leu Leu Leu Leu Leu Val Ala
 20 25 30

Val Ala Ala Ser Ala Ser Thr Ala Gly Phe Leu Leu Arg Gly Ala Leu
 35 40 45

Arg Asp Pro Cys Asp Gly Arg Gly Asp Pro Ala Ala Leu Asn Thr Ala
 50 55 60

Val	Ala	Ser	Gly	Ser	Pro	Leu	Gly	Phe	Met	Arg	Ser	Lys	Leu	Val	Leu	
65					70					75					80	
Leu	Val	Ser	His	Glu	Leu	Ser	Leu	Ser	Gly	Gly	Pro	Leu	Leu	Leu	Met	
				85					90					95		
Glu	Leu	Ala	Phe	Leu	Leu	Arg	His	Val	Gly	Ser	Gln	Val	Val	Trp	Ile	
			100					105					110			
Thr	Asn	Gln	Arg	Ser	Gln	Glu	Thr	Asn	Asp	Val	Thr	Tyr	Ser	Leu	Glu	
		115					120					125				
His	Arg	Met	Leu	Asn	His	Gly	Val	Gln	Val	Leu	Pro	Ala	Arg	Gly	Gln	
		130				135					140					
Glu	Ala	Val	Asp	Ile	Ala	Leu	Lys	Ala	Asp	Leu	Val	Ile	Leu	Asn	Thr	
145					150					155					160	
Ala	Val	Ala	Gly	Lys	Trp	Leu	Asp	Pro	Val	Leu	Lys	Asp	His	Val	Pro	
				165					170					175		
Lys	Val	Leu	Pro	Lys	Ile	Leu	Trp	Trp	Ile	His	Glu	Met	Arg	Gly	His	
			180					185					190			
Tyr	Phe	Lys	Val	Glu	Tyr	Val	Lys	His	Leu	Pro	Phe	Val	Ala	Gly	Ala	
		195					200					205				
Met	Ile	Asp	Ser	His	Thr	Thr	Ala	Glu	Tyr	Trp	Asn	Ser	Arg	Thr	Ser	
	210					215					220					
Asp	Arg	Leu	Lys	Ile	Gln	Met	Pro	Gln	Thr	Tyr	Val	Val	His	Leu	Gly	
225					230					235					240	
Asn	Ser	Lys	Glu	Leu	Met	Glu	Val	Ala	Glu	Asp	Asn	Val	Ala	Arg	Arg	
				245					250					255		
Val	Leu	Arg	Glu	His	Ile	Arg	Glu	Ser	Leu	Gly	Val	Arg	Ser	Glu	Asp	
			260					265					270			
Leu	Leu	Phe	Ala	Ile	Ile	Asn	Ser	Val	Ser	Arg	Gly	Lys	Gly	Gln	Asp	
		275					280					285				
Leu	Phe	Leu	Gln	Ala	Phe	Tyr	Gln	Ala	Leu	Gln	Leu	Ile	Gln	His	Glu	
	290					295					300					
Lys	Leu	Lys	Val	Pro	Arg	Ile	His	Ala	Val	Val	Val	Gly	Ser	Asp	Val	
305					310					315					320	
Asn	Ala	Gln	Thr	Lys	Phe	Glu	Thr	Gln	Leu	Arg	Asp	Phe	Val	Val	Lys	
				325					330					335		
Asn	Thr	Ile	His	Asp	Arg	Val	His	Phe	Val	Asn	Lys	Thr	Leu	Ala	Val	
			340					345					350			
Ala	Pro	Tyr	Leu	Ala	Ala	Ile	Asp	Val	Leu	Val	Gln	Asn	Ser	Gln	Gly	
		355					360					365				

Arg Gly Glu Cys Phe Gly Arg Ile Thr Ile Glu Ala Met Ala Phe Lys
370 375 380

Leu Pro Val Leu Gly Thr Ala Ala Gly Gly Thr Thr Glu Ile Val Leu
385 390 395 400

Asp Gly Ser Thr Gly Leu Leu His Pro Ala Gly Lys Glu Gly Val Ala
405 410 415

Pro Leu Ala Lys Asn Ile Val Arg Leu Ala Ser His Ala Glu Gln Arg
420 425 430

Val Ser Met Gly Glu Lys Gly Tyr Gly Arg Val Lys Glu Met Phe Met
435 440 445

Glu His His Met Ala Glu Arg Ile Ala Ala Val Leu Lys Asp Val Leu
450 455 460

Arg Lys Ser Gln Glu His Ser Arg Ser
465 470

<210> 46
<211> 400
<212> PRT
<213> Zea mays

<400> 46

Pro Arg Val Arg Leu Ile Ile Glu Lys Asn Arg Asp Tyr Thr Val Asp
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Tyr Ser Ser Ser Ser Phe Gly Leu Ser Gly Ala Ser Tyr Ile Ser Ser
20 25 30

Pro Met Arg Glu Thr Glu Gln Ser Lys Thr Ser Phe Asp Gln Phe Tyr
35 40 45

Ser Asn Ala Asn Phe Gln Leu Tyr Leu Ser Phe Cys Asn Phe Asp Lys
50 55 60

Ala Met Phe Leu Gly Phe Phe His Glu Leu Ser Glu Leu Pro Phe Glu
65 70 75 80

Leu Gln Arg Lys Ala Val Arg Asp Leu Lys Thr Ser Leu Ser Gly Glu
85 90 95

Asn Glu Ile Trp His Ser Met Val Tyr Asn Gly Phe Phe Glu Ala Phe
100 105 110

His Glu Phe Leu Lys Asn Asp Ser Gly Ile His Thr Leu Gln Ala Arg
115 120 125

Arg Ala Gly Ile Gln Phe Phe Leu Ala Phe Leu Ser Ser Gly Arg Ala
130 135 140

Arg Ile Pro Ser Val Cys Glu Asp Val Val Leu Leu Ile Ala Ser Leu

145		150		155		160
His Asp Ser Glu Phe Lys Gln Glu Ala Leu Leu Ile Val His Glu Leu						
	165			170		175
Leu Gln Glu Pro Ser Cys Pro Lys Ser Ser Leu Met Ala Ser Ile Leu						
	180			185		190
Ser Pro Ser Val Phe Gly Ala Leu Asp Ser Gly Glu Thr Lys Cys Leu						
	195			200		205
Asp Leu Ala Leu Gln Ile Ile Cys Lys Ile Ser Ser Asp Asn Asp Ile						
	210			215		220
Lys Ser Tyr Leu Leu Ser Ser Gly Ile Val Ser Arg Leu Ser Pro Leu						
	225			230		235
Leu Gly Glu Gly Lys Met Thr Glu Cys Ser Leu Lys Ile Leu Arg Asn						
	245			250		255
Leu Ser Asp Val Lys Glu Thr Ala Gly Phe Ile Ile Arg Thr Gly Asn						
	260			265		270
Cys Val Ser Ser Ile Ser Asp His Leu Asp Thr Gly Ser His Ser Glu						
	275			280		285
Arg Glu His Ala Val Val Ile Leu Leu Gly Val Cys Ser His Ser Pro						
	290			295		300
Glu Val Cys Ser Leu Ser Met Lys Glu Gly Val Ile Pro Ala Leu Val						
	305			310		315
Asp Leu Ser Val Ser Gly Thr Lys Val Ala Arg Asp Cys Ser Val Lys						
	325			330		335
Leu Leu Gln Leu Leu Arg Asn Phe Arg Arg Cys Asp Gln Phe Ser Ser						
	340			345		350
Ser Cys Ser Arg Glu Leu Ala Val Asp His Val Ser Glu Asn Thr Arg						
	355			360		365
Asn Gly Ser Ile Cys Met Gln Pro Ile Ser Lys Ser Ala Arg Tyr Ile						
	370			375		380
Ser Arg Lys Leu Asn Leu Phe Ser Lys Pro Arg Ser Leu Thr Leu Ala						
	385			390		395
						400

<210> 47
 <211> 149
 <212> PRT
 <213> Zea mays

<400> 47

Met Gly Gln Ile Glu Ser Gln Val Thr Pro Pro Ala Glu Glu Pro Ser

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Pro	Pro	Thr	Val	Glu	Pro	Ser	Pro	Ser	Ser	Pro	Ala	Pro	Pro	Pro	Ser
			20					25					30		
Ser	Leu	Glu	Ala	Ile	Ala	Ala	Glu	Ala	Met	Ser	Phe	Asp	Glu	Asp	Asp
		35					40					45			
Thr	Glu	Glu	Ser	Ile	Asp	Val	Lys	Val	Gln	Lys	Ala	Leu	Asp	Cys	Pro
	50					55					60				
Cys	Val	Ala	Asp	Leu	Lys	Asn	Gly	Pro	Cys	Gly	Gly	Gln	Phe	Val	Asp
65					70					75					80
Ala	Phe	Ser	Cys	Phe	Leu	Arg	Ser	Arg	Glu	Glu	Glu	Lys	Gly	Ser	Asp
				85					90					95	
Cys	Val	Lys	Pro	Phe	Ile	Thr	Leu	Gln	Asp	Cys	Ile	Lys	Ala	Asn	Pro
			100					105					110		
Glu	Ala	Phe	Ser	Lys	Glu	Ile	Leu	Glu	Glu	Glu	Glu	Asn	Asp	Glu	Glu
		115					120					125			
Ala	Asp	Lys	Ser	Asn	Leu	Lys	Val	Arg	Ala	Pro	Ser	Trp	Ser	Arg	Glu
	130					135					140				
Ser	Lys	Pro	Lys	Val											
145															

<210> 48
 <211> 45
 <212> PRT
 <213> Zea mays

<400> 48

Gly	Gln	Thr	Arg	Trp	Glu	Met	Phe	Asp	Leu	Leu	Ser	Ser	Leu	Pro	Ser
1				5					10					15	
Thr	Ser	Ser	Ala	Ser	Ser	Thr	Thr	Thr	Val	Ser	Ser	Thr	Ala	Ser	Ser
			20					25					30		
Gly	Ala	Pro	Pro	Pro	Ser	Arg	Pro	Asp	Trp	Met	Leu	Phe			
		35					40					45			

<210> 49
 <211> 217
 <212> PRT
 <213> Zea mays

<400> 49

His	Ala	Ser	Ala	Ile	Gly	Arg	Leu	Ile	Ser	Pro	Ser	Ser	Gly	Cys	Ser
1				5					10					15	

Gly Thr Ser Ser Pro Phe Pro Asp Pro Glu Met Gln Ala Ser Ser Arg
 20 25 30
 Ser Ala Leu Arg Leu Phe Pro Val Arg Glu Pro Pro Lys Ile Leu Asp
 35 40 45
 Gly Glu Gly Val Ala Thr Gln Lys Leu Ile Pro Arg His Met Arg Asn
 50 55 60
 Gly Gly Ser Leu Leu Asp Gly Gln Ile Ser Ala Ala Val Pro Val Val
 65 70 75 80
 Asp Phe Ser Ala Arg Leu Gln Pro Asn Glu His Ala Met Asp His Arg
 85 90 95
 Val Ser Phe Glu Leu Thr Val Glu Asp Val Ala Arg Cys Leu Glu Lys
 100 105 110
 Lys Thr Ala Ile Ser Gly Asp Ser Gly Thr Ala Ser Phe His Leu Ala
 115 120 125
 Pro Thr Gly Ser Gly Asp His His Arg Glu Ser Asn Glu Ala Arg Ala
 130 135 140
 Gly Leu Tyr Val Asp Glu Ser Tyr His Asp Leu Pro Glu Lys Ala Arg
 145 150 155 160
 Arg Ser Leu Ser Leu Arg Leu Ala Lys Glu Phe Asn Phe Asn Asn Val
 165 170 175
 Asp Val Gly Ser Val Glu Pro Ser Val Gly Ser Asp Trp Trp Ala Asn
 180 185 190
 Glu Lys Val Ala Gly Met Thr Thr Glu Pro Lys Lys Asn Trp Ser Phe
 195 200 205
 His Pro Val Val Gln Pro Gly Val Ser
 210 215

<210> 50
 <211> 198
 <212> PRT
 <213> Zea mays

<400> 50

Met Gly Lys Ala Lys Lys Gly Pro Lys Phe Ala Val Met Lys Lys Ile
 1 5 10 15
 Val Thr Ser Lys Ala Ile Lys Ser Tyr Lys Glu Glu Val Leu Asn Pro
 20 25 30
 Glu Lys Lys Asn Leu Met Lys Glu Lys Leu Pro Arg Asn Val Pro Thr
 35 40 45
 His Ser Ser Ala Leu Phe Phe Gln Tyr Asn Thr Ala Leu Gly Pro Pro

50

55

60

Tyr Arg Val Leu Val Asp Thr Asn Phe Ile Asn Phe Ser Ile Gln Asn
65 70 75 80

Lys Leu Asp Leu Glu Lys Gly Met Met Asp Cys Leu Tyr Ala Lys Cys
85 90 95

Thr Pro Cys Ile Thr Asp Cys Val Met Ala Glu Leu Glu Lys Leu Gly
100 105 110

Gln Lys Tyr Arg Val Ala Leu Arg Ile Ala Lys Asp Pro Arg Phe Glu
115 120 125

Arg Ile Leu Cys Thr His Lys Gly Thr Tyr Ala Asp Asp Cys Leu Val
130 135 140

Glu Arg Val Thr Gln His Lys Cys Tyr Ile Val Ala Thr Cys Asp Arg
145 150 155 160

Asp Leu Lys Arg Arg Ile Arg Lys Ile Pro Gly Val Pro Ile Met Tyr
165 170 175

Ile Thr Lys Arg Lys Tyr Ser Ile Glu Arg Leu Pro Glu Ala Thr Ile
180 185 190

Gly Gly Ala Pro Arg Ile
195

<210> 51

<211> 265

<212> PRT

<213> Glycine max

<400> 51

Met Ser Val Ile Asp Ile Leu Thr Arg Val Asp Ser Ile Cys Lys Lys
1 5 10 15

Tyr Asp Lys Tyr Asp Val Gln Ser Gln Arg Asp Ser Asn Leu Ser Ser
20 25 30

Asp Asp Ala Phe Ala Lys Leu Tyr Ala Ser Val Asp Ala Asp Ile Glu
35 40 45

Ala Leu Leu Gln Lys Ala Asp Thr Ala Ser Lys Glu Lys Ser Lys Ala
50 55 60

Ser Thr Val Ala Ile Asn Ala Glu Ile Arg Arg Thr Lys Ala Arg Leu
65 70 75 80

Leu Glu Glu Val Pro Lys Leu Gln Lys Leu Ala Met Lys Lys Val Lys
85 90 95

Gly Leu Ser Ser Gln Glu Phe Ala Ala Arg Asn Asp Leu Ala Leu Ala
100 105 110

Leu Pro Asp Arg Ile Gln Ala Ile Pro Asp Gly Thr Pro Ala Ala Ser
 115 120 125
 Lys Gln Thr Gly Ser Trp Ala Ala Ser Ala Ser Arg Pro Gly Ile Lys
 130 135 140
 Phe Asp Thr Asp Gly Lys Phe Asp Asp Glu Tyr Phe Gln Gln Thr Glu
 145 150 155 160
 Glu Ser Ser Gly Phe Arg Lys Glu Tyr Glu Met Arg Lys Met Lys Gln
 165 170 175
 Asp Gln Gly Leu Asp Met Ile Ala Glu Gly Leu Asp Thr Leu Lys Asn
 180 185 190
 Met Ala His Asp Met Asn Glu Glu Leu Asp Arg Gln Val Pro Leu Met
 195 200 205
 Asp Glu Ile Asp Thr Lys Val Asp Arg Ala Ser Ser Asp Leu Lys Asn
 210 215 220
 Thr Asn Val Arg Leu Arg Asp Thr Val Asn Gln Leu Arg Ser Ser Arg
 225 230 235 240
 Asn Phe Cys Ile Asp Ile Val Leu Leu Ile Ile Ile Leu Gly Ile Ala
 245 250 255
 Ala Tyr Leu Tyr Asn Val Leu Lys Lys
 260 265

<210> 52
 <211> 107
 <212> PRT
 <213> Zea mays
 <400> 52

His Ala Ser Gly Phe Leu Lys Cys Ala Ile Leu Thr Lys Pro Gln Ser
 1 5 10 15
 Tyr Gly Val Leu Leu Gln Leu Pro Ala Pro Gln Leu Glu Asn Ala Leu
 20 25 30
 Ser Lys Asn Pro Thr Leu Lys Thr Pro Leu Ala Glu His Ala Glu Gln
 35 40 45
 Pro Asn Ile Arg Ser Thr Leu Pro Arg Ser Thr Leu Val Val Leu Gly
 50 55 60
 Leu Ala Glu Asp Gln Pro Gln Gln Pro Ala Val Thr Gln Val Gln Ser
 65 70 75 80
 Ser Gln Asn Gln Ala Ala Glu Thr Ser Ser Ser Ala Ala Asp Thr Ala
 85 90 95

Thr Glu Val Thr Gln Glu Ser Ser Gly Ala Ser
 100 105

<210> 53
 <211> 478
 <212> PRT
 <213> Glycine max

<400> 53

Ile Arg Leu Glu Phe Glu Ser Leu Glu Ile Glu Met Ala Asn Glu Asn
 1 5 10 15

Glu Pro Ala Lys Leu Leu Leu Pro Tyr Leu Gln Arg Ala Asp Glu Leu
 20 25 30

Gln Lys His Glu Pro Leu Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met
 35 40 45

Glu Arg Gly Leu Lys Ile Pro Gln Ser Glu Arg Thr Lys Thr Thr Asn
 50 55 60

Ala Leu Leu Val Ser Leu Met Lys Gln Leu Glu Lys Asp Lys Lys Ser
 65 70 75 80

Ile Gln Leu Gly Pro Glu Asp Asn Leu Tyr Leu Glu Gly Phe Ala Leu
 85 90 95

Asn Val Phe Gly Lys Ala Asp Lys Gln Asp Arg Ala Gly Arg Ala Asp
 100 105 110

Leu Thr Thr Ala Lys Thr Phe Tyr Ala Ala Ser Ile Phe Phe Glu Ile
 115 120 125

Leu Asn Gln Phe Gly Ala Val Gln Pro Asp Leu Glu Gln Lys Gln Lys
 130 135 140

Tyr Ala Val Trp Lys Ala Ala Glu Ile Arg Lys Ala Leu Lys Glu Gly
 145 150 155 160

Arg Lys Pro Thr Ala Gly Pro Pro Asp Gly Asp Glu Asp Leu Ser Val
 165 170 175

Pro Leu Ser Ser Ser Ser Asp Arg Tyr Asp Leu Gly Thr Thr Glu Asn
 180 185 190

Thr Val Ser Ser Pro Gly Pro Glu Ser Asp Ser Ser Arg Ser Tyr His
 195 200 205

Asn Pro Ala Asn Tyr Gln Asn Leu Pro Ser Ile His Pro Ala Ala Pro
 210 215 220

Lys Phe His Asp Thr Val Asn Asp Gln His Ser Ala Asn Ile Pro Ser
 225 230 235 240

Ser Met Pro Phe His Asp Arg Val Asp Asn Asn Lys His Ser Ser Val

245										250					255				
Val	Ser	Pro	Ser	Ser	His	Ser	Phe	Thr	Pro	Gly	Val	Tyr	Pro	Ser	Gln				
			260					265					270						
Asp	Tyr	His	Ser	Pro	Pro	Pro	Ser	Arg	Asp	Tyr	His	Ser	Pro	Pro	Pro				
		275					280					285							
Ser	Gln	Asp	Tyr	His	Ser	Pro	Pro	Ser	Ser	Gln	Asp	Tyr	His	Pro	Pro				
	290					295					300								
Pro	Pro	Ser	Gln	Asp	Tyr	His	Pro	Pro	Pro	Ser	Gln	Asp	Tyr	His	Pro				
305					310					315					320				
Pro	Pro	Ala	Arg	Ser	Glu	Gly	Ser	Tyr	Ser	Glu	Leu	Tyr	Asn	His	Gln				
				325					330					335					
Gln	Tyr	Ser	Pro	Glu	Asn	Ser	Gln	His	Leu	Gly	Pro	Asn	Tyr	Pro	Ser				
			340					345					350						
His	Glu	Thr	Ser	Ser	Tyr	Ser	Tyr	Pro	His	Phe	Gln	Ser	Tyr	Pro	Ser				
		355					360					365							
Phe	Thr	Glu	Ser	Ser	Leu	Pro	Ser	Val	Pro	Ser	Asn	Tyr	Thr	His	Tyr				
	370					375					380								
Gln	Gly	Ser	Asp	Val	Ser	Tyr	Ser	Ser	Gln	Ser	Ala	Pro	Leu	Thr	Thr				
385					390					395					400				
Asn	His	Ser	Ser	Ser	Ala	Gln	His	Ser	Ser	Arg	Asn	Glu	Thr	Val	Glu				
				405					410					415					
Pro	Lys	Pro	Thr	Thr	Thr	Gln	Ala	Tyr	Gln	Tyr	Asp	Ser	Asn	Tyr	Gln				
			420					425					430						
Pro	Ala	Pro	Glu	Lys	Ile	Ala	Glu	Ala	His	Lys	Ala	Ala	Arg	Phe	Ala				
		435					440					445							
Val	Gly	Ala	Leu	Ala	Phe	Asp	Asp	Val	Ser	Val	Ala	Val	Asp	Phe	Leu				
	450					455					460								
Lys	Lys	Ser	Leu	Glu	Leu	Leu	Thr	Asn	Pro	Ser	Ala	Gly	Gln						
465					470					475									

<210> 54
 <211> 143
 <212> PRT
 <213> Zea mays

<400> 54

Met	Glu	Val	Phe	Gly	Lys	Ser	Val	Ile	Ala	Glu	Pro	Ser	Asn	Val	Ile
1				5					10					15	

Phe	Leu	Ser	Ala	Ile	Leu	Asn	Thr	Glu	Gly	Ser	Asn	Pro	Ser	His	Lys
			20					25					30		

Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met Tyr Arg
 35 40 45
 Cys Lys Leu Thr Glu Thr Thr His Ile Cys Asp Lys Asn Cys Asn Gln
 50 55 60
 Arg Ile Leu Tyr Asp Asn His Asn Ser Leu Cys Arg Val Ser Gly Gln
 65 70 75 80
 Leu Phe Pro Leu Ser Pro Leu Glu Gln Gln Ala Val Arg Gly Ile Arg
 85 90 95
 Arg Lys His Glu Val Asp Ser Ser Glu Gly Cys Cys Phe Lys Arg Arg
 100 105 110
 Arg Gly Ala Gln Leu His Pro Ser Pro Phe Glu Arg Ser Tyr Ser Ala
 115 120 125
 Val Tyr Pro Ile Pro Ser Gln Val Gly Asp Gly Met Asp Met Ser
 130 135 140

<210> 55
 <211> 393
 <212> PRT
 <213> Zea mays

<400> 55

Met Lys Val Leu Val Leu Ala Val Leu Ala Leu Val Ala Ala Ala Ser
 1 5 10 15
 Ala Ala Gly Gln Gly Glu Glu Gly Gly Gly Pro Pro Leu Pro Phe Ala
 20 25 30
 Leu Gly Ala Ala Pro Ala Gly Cys Asp Val Ala Gln Gly Glu Trp Val
 35 40 45
 Arg Asp Asp Asp Ala Arg Pro Trp Tyr Gln Glu Trp Glu Cys Pro Tyr
 50 55 60
 Ile Gln Pro Gln Leu Thr Cys Gln Ala His Gly Arg Pro Asp Lys Ala
 65 70 75 80
 Tyr Gln Ser Trp Arg Trp Gln Pro Arg Gly Cys Ser Leu Pro Ser Phe
 85 90 95
 Asn Ala Thr Leu Met Leu Glu Met Leu Arg Gly Lys Arg Met Leu Phe
 100 105 110
 Val Gly Asp Ser Leu Asn Arg Gly Gln Tyr Val Ser Leu Leu Cys Leu
 115 120 125
 Leu His Arg Ala Ile Pro Asp Gly Ala Lys Ser Phe Glu Thr Val Asp
 130 135 140

Ser 145	Leu	Ser	Val	Phe	Arg 150	Ala	Lys	Asn	Tyr	Asp 155	Ala	Thr	Ile	Glu	Phe 160
Tyr	Trp	Ala	Pro	Met 165	Leu	Ala	Glu	Ser	Asn 170	Ser	Asp	Asp	Ala	Val 175	Val
His	Ser	Ala	Asp 180	Asp	Arg	Leu	Ile	Arg 185	Gly	Ala	Pro	Met	Asp 190	Arg	His
Tyr	Ser	Phe 195	Trp	Lys	Gly	Ala	Asp 200	Val	Leu	Val	Phe	Asn 205	Ser	Tyr	Leu
Trp	Trp 210	Val	Ala	Gly	Asp	Lys 215	Ile	Gln	Ile	Leu	Arg 220	Gly	Ala	Asp	Asn
Asp 225	Pro	Ser	Lys	Asp	Ile 230	Val	Glu	Met	Lys	Ser 235	Glu	Glu	Ala	Tyr	Arg 240
Leu	Val	Leu	His 245	Gln	Val	Val	Arg	Trp	Leu 250	Glu	Arg	Asn	Val	Asp 255	Pro
Gly	Lys	Ser	Arg 260	Val	Phe	Phe	Val	Thr 265	Ala	Ser	Pro	Thr	His 270	Thr	Asp
Gly	Arg 275	Ala	Trp	Gly	Asp	Asp 280	Asp	Ala	Glu	Gly	Ser 285	Ser	Asn	Cys	Tyr
Asn 290	Gln	Thr	Ser	Pro	Ile 295	Ser	Ala	Ala	Ser	Ser 300	Tyr	Arg	Gly	Gly	Thr
Ser 305	Arg	Glu	Met	Leu	Arg 310	Ala	Thr	Glu	Glu	Val 315	Leu	Ala	Thr	Ser	Arg 320
Val	Pro	Val	Gly 325	Leu	Val	Asn	Ile	Thr	Arg 330	Leu	Ser	Glu	Tyr	Arg 335	Arg
Asp	Ala	His 340	Thr	Gln	Thr	Tyr	Lys 345	Lys	Gln	Trp	Val	Glu	Pro 350	Thr	Ala
Glu	Gln 355	Arg	Ala	Asp	Pro	Arg	Ser 360	Tyr	Ala	Asp	Cys	Thr 365	His	Trp	Cys
Leu 370	Pro	Gly	Val	Pro	Asp 375	Thr	Trp	Asn	Glu	Leu 380	Leu	Tyr	Trp	Lys	Leu
Phe 385	Phe	Pro	Ser	Asn 390	Asp	Gln	Val	Leu							

<210>	56
<211>	109
<212>	PRT
<213>	Zea mays

<400> 56

Thr Arg Pro Cys Asn Ser Met Asn Met Gln Leu Ser Gln Leu Pro Leu

1	5	10	15
Asp Cys Lys Arg Leu Thr Tyr Asp Ala Leu Glu Gly Ala Asn Val Thr	20	25	30
Pro Thr Ser Phe Tyr Asn Ile Gly Asp Leu Glu Ile Gln Asp Asn Leu	35	40	45
Ala Arg Val Trp Val Asp Ile Gly Ile His Glu Pro Leu Leu Leu Asp	50	55	60
Ile Leu Leu Asn Ala Leu Thr Thr Ile Ser Ser Asp His Val Gly Ile	65	70	75
Lys Gln Val Gln Phe Gly Gly Ser Glu Phe Leu Asn Trp Ser Glu Asp	85	90	95
Leu Lys Thr Glu Glu Val Gly Tyr Ser Val Cys Lys Ile	100	105	

<210> 57
 <211> 200
 <212> PRT
 <213> Glycine max
 <400> 57

Phe Gly Ser Ser Met Ala Ser Ala Thr Arg Leu Val His Cys Glu Leu	1	5	10	15
Arg Ser Ala Arg Pro Ala Val Arg Ala Arg Glu Pro Ala Gly Pro Val	20	25	30	
Gln Val Thr Ile Pro Lys Pro Lys Ala Ala Glu Ala Glu Gly Ala Asn	35	40	45	
Ile Val Leu Gln Pro Arg Leu Cys Thr Leu Arg Ser Tyr Gly Ser Asp	50	55	60	
Arg Ala Gly Val Leu Ile Lys Ala Arg Lys Glu Gly Asp Asp Asp Asp	65	70	75	80
Val Ser Pro Phe Phe Ala Ala Leu Ser Asp Tyr Ile Glu Ser Ser Lys	85	90	95	
Lys Ser His Asp Phe Glu Ile Ile Ser Gly Arg Leu Ala Met Met Val	100	105	110	
Phe Ala Ala Thr Val Thr Met Glu Met Val Thr Gly Asn Ser Met Phe	115	120	125	
Arg Lys Met Asp Ile Glu Gly Ile Thr Glu Ala Gly Gly Val Cys Leu	130	135	140	
Gly Ala Val Thr Cys Ala Ala Leu Phe Ala Trp Phe Ser Ser Ala Arg	145	150	155	160

Asn Arg Val Gly Arg Ile Phe Thr Val Ser Cys Asn Ala Phe Ile Asp
165 170 175

Ser Val Ile Asp Gln Ile Val Asp Gly Leu Phe Tyr Glu Gly Asp Asp
180 185 190

Pro Thr Asp Trp Pro Asp Glu Pro
195 200

<210> 58
<211> 285
<212> PRT
<213> Zea mays

<400> 58

Pro Arg Val Arg Cys Pro Thr Thr Leu Lys Arg Ile Cys Arg Gln His
1 5 10 15

Gly Ile Asn Arg Trp Pro Ser Arg Lys Ile Lys Lys Val Gly His Ser
20 25 30

Leu Lys Lys Leu Gln Met Val Ile Asp Ser Val His Gly Ser Glu Gly
35 40 45

Thr Val Gln Leu Ser Ser Leu Tyr Glu Asn Phe Thr Lys Thr Thr Trp
50 55 60

Ser Glu Arg Glu Leu Gln Gly Asp Ala Thr Tyr Pro Leu Ser Glu Glu
65 70 75 80

Lys Gly Pro Leu Glu Pro Ser Val Pro Asp Arg Tyr Cys Glu Gly Arg
85 90 95

Phe Thr Ser His Thr Ser Gly Ser Asn Ser Leu Ser Pro Ser Cys Ser
100 105 110

Gln Ser Ser Asn Ser Ser His Gly Cys Ser Ser Gly Ser Lys Ser Gln
115 120 125

Gln His Val Ser Ala Pro Gln Leu Ala Val Lys Lys Glu Val Phe Met
130 135 140

Glu Glu Asn Gln Ser Ser Thr Leu Leu Lys Ala Ala Ser His Ala Glu
145 150 155 160

Leu Gln Met Leu Pro Glu Glu Arg Leu Val Thr Leu Pro Arg Ser His
165 170 175

Ser Gln Val Leu Leu Ser Glu Gln Lys Pro Val Glu Asn Ile Thr Gly
180 185 190

Met Gln Met Ser Lys Pro Asp Ser Leu Lys Ile Lys Ala Met Tyr Gly
195 200 205

Glu Glu Arg Cys Ile Phe Arg Leu Gln Pro Ser Trp Gly Phe Glu Lys
210 215 220

Leu Lys Glu Glu Ile Leu Lys Arg Phe Gly Ile Ala Arg Glu Val Tyr
225 230 235 240

Val Asp Leu Lys Tyr Leu Asp Asp Glu Ser Glu Trp Val Leu Leu Thr
245 250 255

Cys Asn Ala Asp Leu Leu Glu Cys Ile Asp Val Tyr Lys Ser Ser Ser
260 265 270

Thr Gln Thr Val Arg Ile Leu Val His Ser Ser Asp Gln
275 280 285

<210> 59
<211> 115
<212> PRT
<213> Zea mays

<400> 59

Met Arg Ala Met Ser Ser Ala Val Asn Gly Met Leu Arg Ala Arg Leu
1 5 10 15

Arg Gly Ala Ala Arg Val Arg Gly Gly Gly Gly Glu Gly Ala Gly Arg
20 25 30

Trp Thr Thr Pro Gly His Glu Glu Arg Pro Lys Gly Tyr Leu Phe Asn
35 40 45

Arg Pro Pro Pro Pro Pro Gly Glu Ser Arg Lys Trp Glu Asp Trp Glu
50 55 60

Leu Pro Cys Tyr Val Thr Ser Phe Leu Thr Val Val Ile Leu Gly Val
65 70 75 80

Gly Leu Asn Ala Lys Pro Asp Leu Thr Ile Glu Thr Trp Ala His Gln
85 90 95

Lys Ala Leu Glu Arg Leu Gln Gln Gln Glu Leu Ala Ala Ala Asp Thr
100 105 110

Gln Ala Glu
115

<210> 60
<211> 168
<212> PRT
<213> Glycine max

<400> 60

Ile Arg Leu Glu Gln Arg Pro Val Glu Gly Asn Ala Thr Met Lys Gln
1 5 10 15

Asp Leu Arg Ser Phe Lys Leu Ile Leu Glu Tyr Ile Lys Ala Leu Pro
 20 25 30
 Thr Gly Gln Glu Thr Asp Phe Val Leu Val Ser Cys Ser Gly Leu Gly
 35 40 45
 Ile Glu Pro Ser Arg Arg Glu Gln Val Leu Lys Ala Lys Arg Ala Gly
 50 55 60
 Glu Asp Ser Leu Arg Arg Ser Gly Leu Gly Tyr Thr Ile Val Arg Pro
 65 70 75 80
 Gly Pro Leu Gln Glu Glu Pro Gly Gly Gln Arg Ala Leu Ile Phe Asp
 85 90 95
 Gln Gly Asn Arg Ile Ser Gln Gly Ile Ser Cys Ala Asp Val Ala Asp
 100 105 110
 Ile Cys Val Lys Ala Leu His Asp Thr Thr Ala Arg Asn Lys Ser Phe
 115 120 125
 Asp Val Cys Tyr Glu Tyr Ile Ala Glu Asp Gly Arg Glu Leu Tyr Glu
 130 135 140
 Leu Val Ala His Leu Pro Asp Lys Ala Asn Asn Tyr Leu Thr Pro Ala
 145 150 155 160
 Leu Ser Val Leu Glu Lys Asn Thr
 165

<210> 61
 <211> 723
 <212> PRT
 <213> Zea mays
 <400> 61

Met Ala Gly Lys Glu Asp Glu Asn Glu Lys Pro Ser Leu Val Ala Ala
 1 5 10 15
 Gly Gly Lys Gln Asp Arg Thr Ala Ala Thr Thr Glu Ser Leu Pro Gln
 20 25 30
 Arg Thr Asn Leu Glu Trp Gly Lys Ala Ala Cys Ser Glu Asp Asp Ile
 35 40 45
 Gln Lys Cys Val Ala Ala Gly Ala Phe His Pro Gly Glu Leu Val Glu
 50 55 60
 Trp Arg Ala Pro Val Lys Asp Glu Thr Pro Thr Leu Ser Thr Met Glu
 65 70 75 80
 Asp Gln Phe Val Ile Leu Ser Leu Thr His Ile Ile Cys Gly Leu Arg
 85 90 95

Val	Asp	Ala	Ser	Asp	Phe	Leu	Val	Ser	Val	Leu	Glu	Tyr	Tyr	Arg	Leu
			100					105					110		
Glu	Trp	Ser	His	Leu	Thr	Pro	Asn	Ser	Ile	Thr	Ala	Leu	Ser	Ile	Phe
		115					120					125			
Ala	His	Leu	Cys	Glu	Ala	Tyr	Val	Glu	Ala	Pro	Pro	Thr	Val	Glu	Val
	130					135					140				
Phe	Thr	His	Phe	Tyr	Ser	Leu	Tyr	His	Asn	Arg	Lys	Gly	Glu	Thr	Thr
145					150					155					160
Thr	Leu	Gly	Ala	Val	Tyr	Phe	Arg	Leu	Arg	Asp	Arg	Met	Lys	Lys	Asn
				165					170					175	
Tyr	Pro	Leu	Tyr	Tyr	Leu	Arg	Ser	Ser	Gln	Phe	Met	Trp	Val	Ser	Leu
			180					185					190		
Trp	Phe	Tyr	Ala	Lys	Val	Pro	Lys	Ser	Cys	Arg	Leu	Thr	Phe	Arg	Gly
		195					200					205			
Asp	Ile	Leu	Lys	Glu	Glu	Asn	Asn	Trp	Asn	Trp	Lys	Asp	Leu	Leu	Pro
	210					215					220				
Leu	Ser	Cys	Glu	Gln	Met	Lys	Gln	Val	Gly	Gln	Ile	Met	Lys	Leu	Ser
225					230					235					240
Asn	Gln	Gly	Leu	Thr	Gly	Ala	Asp	Ile	Ile	His	Asp	Tyr	Leu	Lys	Arg
				245					250					255	
Arg	Ile	Ser	Pro	Leu	Arg	Arg	Arg	Met	His	Leu	Thr	Cys	Asn	Tyr	Ser
			260					265					270		
Gly	Leu	Ser	Asp	Pro	Thr	Arg	Asp	Ser	Asp	Lys	Asp	Leu	Ser	Val	Glu
		275					280					285			
Asp	Ile	Glu	Ser	Lys	Leu	Ser	Tyr	Leu	Leu	Asp	Leu	Lys	Arg	Met	Gly
	290					295					300				
Val	Lys	Gln	Pro	Thr	Gly	Arg	Leu	Val	Arg	Ala	Ser	Thr	Asn	Asp	Gln
305					310					315					320
Ala	Asn	Gln	Pro	Leu	Asp	Leu	Leu	Asn	Val	Cys	Ser	Thr	His	Glu	Ala
				325					330					335	
Lys	Lys	Glu	Ala	Gln	Pro	Gln	Val	Cys	Ala	Ser	Leu	Arg	Arg	Tyr	Thr
			340					345					350		
Arg	Gln	Ser	Ala	Gly	Pro	Arg	Lys	Val	Ala	Val	Pro	Pro	Pro	Leu	Lys
		355					360					365			
Ile	Asp	Pro	Pro	Pro	Thr	Gln	Gly	Pro	Ala	Pro	Glu	Glu	Ile	Leu	Asp
	370					375					380				
Ala	Thr	Thr	Asn	Ile	Ala	Thr	Ala	Val	Ser	Pro	Asn	Leu	Gly	Val	Glu
385					390					395					400

Gln	Lys	Ser	Ile	Glu	His	Pro	Thr	Val	Ala	Glu	Glu	Arg	Lys	Ile	Ala		
				405					410					415			
Glu	Leu	Val	Lys	Pro	Thr	Phe	Ser	Val	Ile	Gly	Ala	Lys	Arg	Lys	Ala		
			420					425					430				
Ser	Ala	Pro	Arg	Ser	Arg	Ser	Lys	Arg	Arg	Ala	Lys	Tyr	Ser	Leu	Leu		
		435					440					445					
Ser	Val	Val	Thr	Lys	Thr	Arg	Met	Ser	Ser	Leu	Asp	Thr	Gly	Ser	Ile		
	450					455					460						
Lys	Gly	Thr	Ser	Arg	Thr	Lys	Glu	Ala	Val	Leu	Ala	Leu	Asn	Ser	Arg		
465					470					475					480		
Ser	Ile	Gly	Leu	Ala	Arg	Cys	Pro	Pro	Ala	Ser	Leu	Ala	Glu	Gly	Thr		
			485						490					495			
Gly	Asn	Gly	Gly	Leu	Phe	Met	Leu	Ala	Lys	Val	Val	Asp	His	Thr	Lys		
		500						505					510				
Val	Val	Glu	Asp	Ser	Met	Ser	Asn	Ile	Leu	Leu	Asn	Gln	Gln	Val	Gly		
		515					520					525					
Asp	Ser	Ser	Arg	Lys	Glu	Val	Asp	Pro	Ala	Gln	Ser	Ile	Thr	Glu	Ile		
	530					535					540						
Val	Gln	Asp	Gln	Glu	Ala	Ile	Glu	Val	Ser	Ala	Ala	Ile	Pro	Val	Pro		
545					550					555					560		
Asn	Lys	Glu	Glu	Ile	Asn	Ser	Gly	Val	Ile	Trp	Glu	Arg	Met	Gln	Lys		
				565				570						575			
Val	Gln	Ser	Glu	Tyr	Val	Ser	Leu	Ser	Met	Thr	Ala	Ser	Ser	Glu	Leu		
			580					585					590				
Leu	Glu	Gln	Ala	Lys	Lys	Leu	Val	Met	Glu	Asn	Lys	Arg	Leu	Lys	Asp		
		595					600					605					
Val	Gln	Ile	Met	Leu	Ser	Gln	Gln	Val	Lys	Asp	Leu	Glu	Asp	Gly	Arg		
	610					615					620						
Arg	Leu	Leu	Thr	Glu	Arg	Met	Lys	Lys	Ala	Glu	Gln	Glu	Thr	Phe	Lys		
625					630					635					640		
Ile	Ile	Glu	Glu	Asn	Met	Lys	Leu	Lys	Asp	Glu	Asn	Lys	Gly	Gln	Lys		
				645					650					655			
Gln	Met	Ile	Glu	Glu	Leu	Ser	Lys	Gln	Asn	Glu	Ser	Thr	Leu	Gly	Ala		
			660					665					670				
Leu	Val	His	Lys	Cys	Thr	Leu	Leu	Asp	Arg	Tyr	Lys	Glu	Glu	Ser	Ala		
		675					680					685					
Gln	Leu	Ile	Arg	Glu	Lys	Glu	Glu	Leu	Gln	Ser	Arg	Val	Ser	Arg	Val		
	690					695					700						

Asn Asp Leu Val Lys Leu Val Ser Ser Thr Leu Cys Gln Glu Lys Asp
 705 710 715 720

Ser Ala Ser

<210> 62
 <211> 342
 <212> PRT
 <213> Glycine max

<400> 62

Met Ser Glu Lys Ala Leu Arg Asp Leu Asn Thr Ile Leu Gly Thr Glu
 1 5 10 15

Arg Lys Asn Glu Asp Ser Ser Lys Ala Cys Leu Ser Lys Pro Ser Val
 20 25 30

Asp Asn Ala Val Glu Asn Ile Glu Glu Trp Gln Lys Lys Asn Asn Ser
 35 40 45

Pro Ser Leu Val Ser Pro Ala Val Asn Gly Asn Leu Ala Val Thr Ala
 50 55 60

Asn Ser Gly Ala Glu Val Val Asn Pro Glu Val Glu Tyr Ile Glu Ser
 65 70 75 80

Glu Asn Leu Asn Asp Val Asp Asp Ile Asp Thr Cys Leu Lys Thr Leu
 85 90 95

Leu Ala Gly Leu Asp Ser Lys Asp Trp Val Leu Val Cys Asp Thr Leu
 100 105 110

Asn Asn Val Arg Arg Leu Ser Ile Phe His Lys Glu Ala Met Leu Asp
 115 120 125

Met Leu Gly Asp Val Ile Thr Ser Ile Ala Lys Ser Leu Lys Ser Pro
 130 135 140

Arg Ser Ala Val Cys Lys Thr Ala Ile Met Thr Ser Ala Asp Ile Phe
 145 150 155 160

Ser Ala Tyr Asn Asp Leu Ile Ile Asp Ser Leu Asp Pro Leu Leu Val
 165 170 175

Gln Leu Leu Leu Lys Ser Ser Gln Asp Lys Arg Phe Val Cys Glu Ala
 180 185 190

Ala Glu Lys Ala Leu Ile Ser Met Thr Ile Trp Ile Ser Pro Ile Ser
 195 200 205

Leu Leu Pro Lys Leu Gln Pro Tyr Leu Lys Asn Lys Asn Pro Arg Ile
 210 215 220

Arg Ala Lys Ala Ser Met Cys Phe Ser Arg Ser Val Pro Gln Leu Gly
 225 230 235 240

Ala Glu Gly Ile Lys Thr Tyr Gly Ile Asp Lys Leu Ile Gln Val Ala
245 250 255

Ala Ser Gln Leu Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg
260 265 270

Thr Leu Leu Leu Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu
275 280 285

Ile Lys Pro Ala Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu
290 295 300

Glu Asn Pro Glu Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu
305 310 315 320

Ser Pro Leu Ser Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala
325 330 335

Arg Glu Gly Leu Val Ser
340

<210> 63
<211> 509
<212> PRT
<213> Zea mays

<400> 63

Pro Arg Val Arg Ala Leu Leu Ala Ser Thr Ile Val Pro His Pro Asn
1 5 10 15

Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val
20 25 30

Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala
35 40 45

Cys Cys Arg Ala Ser Ser Val Leu Ser His Ile Val Lys Asp Asn Met
50 55 60

Gln Ser Lys Asp Arg Val Leu Gln Ile Gln Leu Glu Thr Leu Thr Pro
65 70 75 80

Ser Leu Gly Arg Thr Glu Pro Val Leu His Arg Ile Val Thr Cys Leu
85 90 95

Ser Ile Ala Ala Ser Thr Glu Gly Glu Asn Asn Gln Asn Asn Gln Pro
100 105 110

Glu Glu Pro Tyr Ile Gln Pro Val Ile Leu Arg Leu Leu Ile Ile Trp
115 120 125

Leu Val Asp Cys Ser Asn Ala Val Asn Cys Leu Leu Glu Ser Ala Val
130 135 140

His	Leu	Asn	Tyr	Ile	Ile	Glu	Leu	Ala	Ser	Ser	Lys	Arg	Tyr	Thr	Ala	
145					150					155					160	
Cys	Val	Arg	Gly	Leu	Ala	Ala	Val	Val	Leu	Gly	Ala	Cys	Ile	Leu	Tyr	
				165					170					175		
Asn	Ala	Ser	His	Glu	Lys	Gly	Arg	Asp	Ala	Phe	Ala	Val	Ala	Asp	Ala	
			180					185					190			
Ile	Ser	Gln	Lys	Ile	Gly	Leu	Thr	Thr	Tyr	Phe	Leu	Arg	Phe	Asp	Glu	
		195					200					205				
Leu	Arg	Arg	Ser	Leu	Ala	His	Pro	Leu	Pro	Glu	Gln	His	His	Arg	Lys	
	210					215					220					
Glu	Leu	Ser	Arg	Ser	Ser	Ala	Asn	Ser	Met	Ser	Asp	Phe	Gln	Glu	Ile	
225					230					235					240	
Glu	Glu	Asp	Glu	Thr	Asn	Lys	Asp	Asp	Gln	His	Pro	Val	Leu	Ser	Glu	
				245					250					255		
Ile	Phe	Asp	Ser	Gln	Phe	Val	Asn	Phe	Leu	Ser	Lys	Leu	Glu	Ala	Asp	
			260					265					270			
Ile	Arg	Glu	Asn	Ile	Met	Asp	Ile	Phe	Ser	Arg	Thr	Lys	Thr	Ala	Thr	
		275					280					285				
Ala	Leu	Leu	Pro	Thr	Glu	Leu	Glu	Gln	Lys	Asn	Gly	Glu	Val	Asp	Gly	
	290					295					300					
Glu	Tyr	Ile	Lys	Arg	Leu	Lys	Ser	Phe	Val	Glu	Lys	Gln	Cys	Asn	Glu	
305					310					315					320	
Met	Gln	Asp	Leu	Leu	Ala	Arg	Asn	Ala	Met	Leu	Ala	Glu	Glu	Leu	Val	
				325					330					335		
Arg	Thr	Gly	Gly	Gly	Thr	Thr	Thr	Asp	Thr	Ser	Gln	Arg	Pro	Asn	Asn	
			340					345					350			
Gly	Arg	Glu	Arg	Val	Gln	Ile	Glu	Ala	Leu	Arg	Gln	Glu	Leu	Glu	Gly	
		355					360					365				
Ala	Arg	Arg	Gln	Ile	Glu	Ala	Leu	Glu	Thr	Asp	Lys	Ser	Gln	Ile	Glu	
	370					375					380					
Ala	Glu	Ala	Asn	Asn	Gln	Arg	Asn	Leu	Ala	Val	Lys	Leu	Glu	Ser	Asp	
385					390					395					400	
Leu	Lys	Ser	Leu	Ser	Glu	Ala	Tyr	Asn	Ser	Ile	Glu	Gln	Ala	Asn	Tyr	
				405					410					415		
Arg	Leu	Asp	Ala	Glu	Val	Lys	Thr	Leu	Arg	Gln	Gly	Gly	Ser	Val	Pro	
			420					425					430			
Tyr	Pro	Asp	Val	Glu	Ala	Ile	Lys	Ala	Gln	Ala	Lys	Glu	Glu	Ala	Glu	
		435					440					445				

Lys Asp Ser Glu Ala Glu Leu Asn Gly Leu Leu Val Cys Leu Gly Gln
 450 455 460

Glu Gln Thr Lys Val Glu Lys Leu Ser Thr Arg Leu Ala Glu Leu Gly
 465 470 475 480

Glu Asp Val Asp Ala Leu Leu Gln Gly Ile Gly Asp Asp Thr Ala Ile
 485 490 495

Pro Asp Asp Asp Asp Asp Asp Asp Glu Asp Ser Glu Glu
 500 505

<210> 64
 <211> 102
 <212> PRT
 <213> Zea mays

<400> 64

Gln Phe Lys Ile Asp Pro Gln Asp Phe Gln Asp Ser Glu Pro Asp Ile
 1 5 10 15

Leu Ala Asn Ser Ala Ser Ser Ile Ile Glu Arg Ile Lys Glu Asn Ser
 20 25 30

Asp Gln Cys Ala Ala Ala Leu Arg Ser Leu Cys Arg Arg Lys Lys Gly
 35 40 45

Leu Thr Val Glu Glu Ala Ser Leu Ile Gly Val Asp Ser Leu Gly Ile
 50 55 60

Asp Val Arg Ala Phe Ser Gly Leu Glu Val Lys Thr Val Arg Phe Ser
 65 70 75 80

Phe Asn Ala Gln Ala Leu Ser Glu Arg Ser Ala Glu Lys Lys Ile Arg
 85 90 95

Arg Met Leu Phe Pro Arg
 100

<210> 65
 <211> 587
 <212> PRT
 <213> Zea mays

<400> 65

Pro Arg Val Arg Ser Val Leu Lys Thr Lys Pro Ser Pro Arg Ile Leu
 1 5 10 15

Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
 20 25 30

Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
 35 40 45

Ile	Glu	Arg	Arg	Val	Gly	Gly	Phe	Asp	Phe	Leu	Glu	Cys	Asn	Asn	Lys	50	55	60	
Asp	Phe	Arg	Ala	Leu	Arg	Ile	Leu	Gly	Ala	Leu	Asn	Ala	Arg	Asp	Ala	65	70	75	80
Lys	Asn	Lys	Asn	Asp	Ser	Ser	Gly	Arg	Pro	Met	Ala	Thr	His	Arg	Thr	85	90	95	
Gly	Tyr	Asp	Leu	Thr	Thr	Ser	Gly	Ser	Phe	Gln	Ala	Pro	Ile	Val	Val	100	105	110	
Met	Lys	Pro	Ala	Gly	Thr	Thr	Glu	Lys	His	Gly	Val	Ser	Leu	Ala	Ser	115	120	125	
Val	Ala	Pro	Ile	Ala	Gly	Leu	Arg	Ser	Leu	Arg	Lys	Leu	Pro	Ala	Arg	130	135	140	
Tyr	Ser	Ser	Phe	Thr	Gly	Thr	Asn	Glu	Thr	Ser	Thr	Asn	Glu	Asn	Ile	145	150	155	160
His	Leu	Arg	Met	Ser	Arg	Ala	Gln	Leu	Lys	Ser	Glu	Glu	Thr	Val	Ser	165	170	175	
Ser	Ala	Asn	Ser	Pro	Arg	Pro	Thr	Ser	Ser	Ser	Ser	Pro	Arg	Asn	Val	180	185	190	
Leu	Lys	Asn	Ala	Glu	Pro	Glu	Arg	Arg	Ser	Arg	Pro	Pro	Val	Ser	Pro	195	200	205	
Lys	Ser	Pro	Ser	Lys	Lys	Ser	Asn	Glu	Val	Val	Ser	Pro	Lys	Gly	Arg	210	215	220	
Thr	Arg	Ser	Lys	Pro	Ser	Gln	Val	Lys	Ser	His	Arg	Asp	Glu	Val	Leu	225	230	235	240
Gln	Ser	Thr	Gly	Asn	Arg	Ile	Ser	Leu	Ala	Lys	Gln	Val	Asp	Val	Ser	245	250	255	
Ile	Ile	Asp	Cys	Pro	Lys	Leu	Pro	Gly	Gly	Asn	Ser	Thr	Phe	Val	Pro	260	265	270	
Pro	Ser	Asn	Ala	Ala	Ala	Thr	Ala	Ser	His	Lys	Ala	Pro	Ser	Ile	Leu	275	280	285	
Asp	Ser	Asp	Gln	Asn	Ile	His	Ser	Leu	Asp	Asn	Ile	Pro	Ser	Pro	Val	290	295	300	
Ser	Val	Leu	Asp	Thr	Ser	Phe	Tyr	His	Lys	Arg	Ile	Ser	Asp	Ser	Phe	305	310	315	320
Lys	Asp	Gly	Glu	Thr	His	Ser	Ser	Glu	Glu	Cys	Trp	Asn	Pro	Asn	Ser	325	330	335	
Leu	Pro	Asp	Thr	Pro	Gln	Ser	Lys	Ala	Ser	Ser	Glu	Ala	Asn	Gln	Ile	340	345	350	

Lys Pro Glu Asn Leu Glu Val Leu Ile Gln Lys Leu Glu Gln Leu Gln
355 360 365

Ser Met Asn Glu Glu Asp Ala Ser Ile Lys Glu Val Met Ala Ser Val
370 375 380

Thr Ala Asn Lys Asp His Gln Tyr Ile Tyr Glu Ile Leu Leu Ala Ser
385 390 395 400

Gly Leu Leu His Lys Glu His Ser Ile Thr Ala Leu Pro Ala Gln Leu
405 410 415

Gln Pro Ser Asn Tyr Pro Ile Asn Pro Glu Leu Phe Leu Ile Leu Glu
420 425 430

Gln Thr Lys Pro Asp Leu Val Phe Ala Phe Gln Thr Val Ser Gly Thr
435 440 445

Lys Lys Ser Cys Lys Pro Tyr Thr Gly Lys Leu His Arg Arg Leu Val
450 455 460

Phe Asp Leu Val Asn Glu Thr Ile Ala Gln Lys Met Ile Ile Cys Arg
465 470 475 480

Ser Gly Ser Gln Pro Val Lys Phe Leu Gln Ser Arg Lys Leu Ser Gly
485 490 495

Trp Gln Leu Phe Lys Asp Leu Cys Thr Glu Val Asp Arg Gln Ile Lys
500 505 510

Cys Thr Gly Glu Glu Glu Asn Gly Asn Met Ile Leu Asp Glu Asp Thr
515 520 525

Val Asn Gly Thr Lys Asp Trp Met Ser Phe Asp Thr Met Leu His Gly
530 535 540

Met Val Trp Glu Ile Glu Arg Ser Ile Phe Lys Gly Leu Ile Asp Glu
545 550 555 560

Val Ile Gly Gly Glu Thr Ile Glu Lys Met Gln Phe Gly Gln Arg Lys
565 570 575

Leu Gln Arg Gln Leu Ser Phe Ser Ser Ile Asn
580 585

<210> 66
<211> 243
<212> PRT
<213> Zea mays

<400> 66

Pro Arg Val Arg Ile Phe Leu Ala Trp Trp Leu Thr Arg Lys Ala Gln
1 5 10 15

Ile His Cys Leu Ala Val Gln Met Leu Leu Leu Arg Cys Leu Leu Met
 20 25 30
 Asp Leu Asp Arg Gln Asn Thr Gly Lys Ala Thr Val Leu Gly Asp Ala
 35 40 45
 Ala Arg Val Leu Arg Asp Leu Ile Thr Gln Val Glu Ser Leu Arg Gln
 50 55 60
 Glu Gln Ser Ala Leu Val Ser Glu Arg Gln Tyr Val Ser Ser Glu Lys
 65 70 75 80
 Asn Glu Leu Gln Glu Glu Asn Ser Ser Leu Lys Ser Gln Ile Ser Glu
 85 90 95
 Leu Gln Thr Glu Leu Cys Ala Arg Met Arg Ser Ser Ser Leu Ser Gln
 100 105 110
 Thr Ser Ile Gly Met Ser Asp Pro Ala Thr His Gln Gln Met Gln Met
 115 120 125
 Trp Ser Ser Ile Pro His Leu Ser Ser Val Ala Met Ala Ala Arg Pro
 130 135 140
 Ala Ser Ala Ala Ser Pro Leu His Gly Gln Glu Gly Tyr Ser Ala Asp
 145 150 155 160
 Ala Gly Gln Ala Gly Tyr Ala Pro Gln Pro Gln Pro Arg Glu Leu Gln
 165 170 175
 Leu Phe Pro Gly Ser Ser Ala Ser Ser Ser Pro Glu Arg Glu Arg Ser
 180 185 190
 Ser Arg Leu Gly Ser Gly Gln Ala Thr Arg Pro Ser Leu Thr Asp Ser
 195 200 205
 Leu Pro Gly Gln Leu Cys Leu Ser Leu Leu Gln Pro Ser Gln Glu Ala
 210 215 220
 Ser Gly Gly Gly Gly Gly Gly Val Met Ser Arg Ser Arg Glu Glu Arg
 225 230 235 240

Arg Asp Gly

<210> 67
 <211> 423
 <212> PRT
 <213> Zea mays

<400> 67

Thr Arg Pro Ala Ile Arg Glu Leu Trp Arg Pro Asn Pro Ser Gln Leu
 1 5 10 15
 Ile Leu Leu Gln Thr Arg Gly Ile Gly Ala Leu His Lys Glu Leu Pro
 20 25 30

Lys Ala Cys Ala Leu Thr Gly Ser Ser Asp Pro Cys Tyr Ile Glu Ala
 35 40 45
 Tyr His Leu Ala Asp Pro Thr Asp Gly Arg Ile Thr Leu His Leu Lys
 50 55 60
 Ile Leu Asn Leu Thr Glu Leu Glu Leu Asn Arg Val Asp Ile Arg Val
 65 70 75 80
 Gly Leu Ser Gly Ala Leu Tyr Tyr Met Asp Gly Phe Ser Arg Thr Val
 85 90 95
 Arg His Leu Arg Asn Leu Val Ser Gln Asp Pro Val Gln Ser Ser Val
 100 105 110
 Thr Val Gly Val Ser His Phe Glu Arg Cys Ser Leu Trp Val Gln Val
 115 120 125
 Leu Tyr Tyr Pro Phe Tyr Gly Ser Ser Gly Ser Thr Asp Tyr Glu Gly
 130 135 140
 Asp Tyr Ala Glu Glu Asp Ser Gln Met Met Arg Gln Lys Arg Ser His
 145 150 155 160
 Arg Pro Glu Leu Gly Glu Pro Val Val Leu Arg Cys Gln Pro Tyr Lys
 165 170 175
 Phe Pro Leu Ala Glu Leu Leu Leu Pro Leu Glu Cys Ser Pro Val Glu
 180 185 190
 Tyr Phe Arg Leu Trp Pro Ser Leu Pro Ala Met Val Glu Cys Thr Gly
 195 200 205
 Thr Tyr Thr Tyr Glu Gly Ser Gly Phe Lys Ala Thr Ala Ala Gln Gln
 210 215 220
 Tyr Asp Ser Ser Pro Phe Leu Ser Gly Leu Lys Ser Ile Ser Ser Lys
 225 230 235 240
 Pro Phe His Gln Val Cys Ser His Phe Ile Arg Thr Val Ala Gly Phe
 245 250 255
 Gln Leu Cys Tyr Ala Ala Lys Thr Trp Phe Gly Gly Phe Val Gly Met
 260 265 270
 Met Ile Phe Gly Ala Ser Glu Val Ser Arg Asn Val Asp Leu Gly Asp
 275 280 285
 Glu Thr Thr Thr Met Ile Cys Lys Phe Val Met Arg Ala Ser Asp Glu
 290 295 300
 Ser Ile Thr Arg Glu Ile Lys Ser Asp Leu Gln Gly Trp Leu Asp Asp
 305 310 315 320
 Ile Thr Asp Gly Ala Val Glu Tyr Met Pro Glu Asp Glu Val Lys Ser
 325 330 335

Val Ala Ala Glu Gln Leu Lys Ile Ser Met Glu Arg Ile Ala Leu Leu
340 345 350

Lys Ala Ala Arg Pro Lys Val Pro Pro Ala Lys Thr Asp Gln Glu Glu
355 360 365

Glu Glu Glu Arg Lys Gln Ser Glu Glu Leu Asp Gly Phe Gly Asn Pro
370 375 380

Lys Gly Pro Ser Thr Leu Ser Lys Leu Thr Ala Glu Glu Ala Glu His
385 390 395 400

Arg Ala Leu Gln Ala Ala Val Leu Gln Glu Trp His Gln Leu Cys Lys
405 410 415

Glu Arg Ala Met Lys Ala Gln
420

<210> 68
<211> 371
<212> PRT
<213> Zea mays

<400> 68

Pro Arg Val Arg Ala Ser Gly Ile Ser Gly Thr Ser Val Arg Leu Thr
1 5 10 15

Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala
20 25 30

Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Gly Trp Val Pro
35 40 45

Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly
50 55 60

Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Leu Lys Glu Ile Leu
65 70 75 80

Gly Ser Ile Leu Lys Asp Asn Glu Gly Ala Leu Leu Asn Leu Asp Gln
85 90 95

Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val
100 105 110

Ser Val His Arg Val Gln Leu Leu Leu Gln Val Leu Ser Val Lys Arg
115 120 125

Phe His His Gln Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu
130 135 140

Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg
145 150 155 160

Arg Val Ala Ser Glu Pro Tyr Asp Ala Ser Arg Val Ala Ser Phe Ile
 165 170 175
 Thr Leu Leu Thr Leu Pro Ile Leu Val Leu Arg Glu Phe Leu Lys Leu
 180 185 190
 Ile Thr Trp Lys Lys Gly Leu Ser Pro Val His Gly Asp Ile Ala Thr
 195 200 205
 Ala Gln Arg Ala Arg Ile Glu Leu Cys Leu Glu Asn His Ser Gly Ser
 210 215 220
 Ala Ser Ser Asp Asn Thr Glu Asn Ser Ser Leu Ala Lys Ser Asn Ile
 225 230 235 240
 His His Asp Arg Ala His Ser Ser Val Glu Phe Ala Leu Thr Phe Val
 245 250 255
 Leu Asp His Ala Leu Ile Pro His Met Asn Val Ala Gly Gly Ala Ala
 260 265 270
 Trp Leu Pro Tyr Cys Val Ser Val Lys Leu Arg Tyr Ser Phe Gly Asp
 275 280 285
 Asn Asn His Ile Ala Phe Leu Ala Met Asn Gly Ser His Gly Gly Arg
 290 295 300
 Ala Cys Trp Leu Gln Phe Glu Glu Trp Glu Arg Cys Lys Gln Lys Val
 305 310 315 320
 Ser Arg Ala Val Glu Thr Val Asn Gly Ser Gly Val Ala Gly Glu Val
 325 330 335
 Gly Gln Gly Arg Leu Arg Met Val Ala Glu Met Ile Gln Lys Gln Leu
 340 345 350
 Gln Leu Cys Leu Gln Gln Leu Arg Asp Asp Pro Leu Ser Ala Gly Ser
 355 360 365
 Thr Ala Ser
 370

<210> 69
 <211> 178
 <212> PRT
 <213> Zea mays

<400> 69

Thr Arg Pro Asp Asp Pro Cys Pro Tyr Leu Leu Ser Ile Trp Thr Pro
 1 5 10 15
 Gly Glu Thr Ala Gln Ser Ile Asp Ala Pro Lys Thr Phe Cys Asp Ser
 20 25 30
 Gly Glu Thr Gly Arg Leu Cys Gly Ser Ser Thr Cys Phe Ser Cys Asn

35	40	45
Asn Ile Arg Glu Met Gln Ala Gln Lys Val Arg Gly Thr Leu Leu Ile		
50	55	60
Pro Cys Arg Thr Ala Met Arg Gly Ser Phe Pro Leu Asn Gly Thr Tyr		
65	70	75
Phe Gln Val Asn Glu Val Phe Ala Asp His Cys Ser Ser Gln Asn Pro		
	85	90
Ile Asp Val Pro Arg Ser Trp Ile Trp Asp Leu Pro Arg Arg Thr Val		
	100	105
Tyr Phe Gly Thr Ser Val Pro Thr Ile Phe Arg Gly Leu Thr Thr Glu		
	115	120
Glu Ile Gln Arg Cys Phe Trp Arg Gly Phe Val Cys Val Arg Gly Phe		
	130	135
Asp Arg Thr Val Arg Ala Pro Arg Pro Leu Tyr Ala Arg Leu His Phe		
	145	150
Pro Val Ser Lys Val Val Arg Gly Lys Lys Pro Gly Ala Ala Arg Ala		
	165	170

Glu Glu

<210> 70
 <211> 222
 <212> PRT
 <213> Zea mays

<400> 70

Thr Arg Pro Leu Arg Val Lys Lys Leu Gln Gln Glu Ala Ala Arg Cys		
1	5	10
Leu Ser Leu His Lys Thr Met Glu Leu Gln Pro Glu Leu Ser Leu Gly		
	20	25
Pro Val Trp Pro Gly Phe Ala Ala Gly Asp Leu Ala Ala Lys Ser Ser		
	35	40
Ser Ser Glu Ser Asp Gly Thr Ser Arg Lys Lys Arg Lys His Tyr Thr		
	50	55
Ala Ser Trp Glu Glu Pro Gln Gln Pro Pro Ala Ser Leu Glu Leu Gln		
	65	70
Leu Asn Asp Pro Leu Pro Leu Asp Trp Glu Gln Cys Leu Asp Leu Gln		
	85	90
Ser Gly Arg Met Tyr Tyr Leu Asn Arg Lys Thr Leu Lys Lys Ser Trp		
	100	105

Val Arg Pro Gln Val Gln Ser Val Asn Leu Asp Leu Asn Ile Ser Thr
115 120 125

Ala Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala Ala
130 135 140

Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe Ser
145 150 155 160

Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu Val
165 170 175

Met Leu Cys Lys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val Gln
180 185 190

Pro Leu Ala Pro Ala Val Pro Pro Ala Ala Val Ala His Trp Arg Ile
195 200 205

Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His
210 215 220

<210> 71
<211> 303
<212> PRT
<213> Zea mays

<400> 71

Met Lys Leu Lys Asn Ser Ala Val Glu Thr Phe Lys Glu Asn Asn Met
1 5 10 15

Ile Phe Thr Ser Glu Gly Asn Leu His Ser Lys Lys Met Arg Glu Asp
20 25 30

Tyr Val Ala Ser Pro Asn Gln Pro Gly Ala Val Gln Thr Arg Cys Lys
35 40 45

Trp Ile Ile Gly Asp Val Thr Glu Val Phe Asp Arg Ser Thr Trp Lys
50 55 60

Leu Gly Lys Ile Leu Lys Met Leu Lys Asn Asn Tyr Phe Val Ile Arg
65 70 75 80

Leu Ala Asp Cys Ile Gln Leu Lys Glu Phe His Ile Ser Ser Leu Arg
85 90 95

Ile Pro Arg Gly Leu Glu Ala Pro Gln Ser Lys Pro Phe His Ala Ala
100 105 110

Asp Lys Ala Thr Gly Arg Gly Asn Arg Arg Pro Ala Asp Gly Ala Leu
115 120 125

Pro Gly Ala Arg Ala Ala Asp Gln Met Gly His Arg Ala Tyr Glu Leu
130 135 140

Gly Ser Ser Gly Lys Lys Arg Lys Ala Thr Ala Asp Ala Ser His His

145		150		155		160
Leu Gly Arg Ala	Ala Ala Ala His Ser Arg Lys Val Ala Ala Ala Ser	165	170	175		
Asn Pro Asn Gly Gly Ser Tyr Pro His Ser Ser Ser Gln Ala Ile Glu		180	185	190		
Asp Ala Glu Cys Ser Val Ala Ser Cys Ser Val Asp Asp Leu Tyr Arg		195	200	205		
Leu Gly Asn Gly Gly Asn Ala Lys Arg Arg Pro Ala Ala Ala Gly Cys		210	215	220		
Leu Pro Asp Asp Ala Met Ser Ala Cys Pro Cys Thr Pro Gly Ala Arg		225	230	235	240	
Asp Gly Glu Asp Asp Asp Ala Ala Gly Val His Gly Leu Glu Leu Glu		245	250	255		
Ala Tyr Gly Ser Thr Met Arg Ala Leu Tyr Ala Ser Gly Pro Leu Thr		260	265	270		
Trp Glu Gln Glu Ala Leu Leu Thr Asn Leu Arg Leu Ser Leu Asn Ile		275	280	285		
Ser Asn Glu Glu His Leu Leu Gln Leu Arg Arg Leu Leu Ser Ser		290	295	300		

<210> 72
 <211> 336
 <212> PRT
 <213> Zea mays
 <400> 72

Pro Arg Val Arg Arg His Ala Arg His Glu His Asp Arg Ser Gly Asp						
1	5	10	15			
Trp Ser His Arg Arg Arg Ala Gly Arg Gly Arg Ile Pro Pro Leu Arg						
20	25	30				
Leu Leu Ser Phe Asp Ser Leu Leu Pro Ala Ser Asn Pro Ser His His						
35	40	45				
Pro Phe Leu Pro Met Ala Ser Asp Ala Pro Ala Glu Gln Pro Ala Thr						
50	55	60				
Gln Gln Lys Pro Thr Arg Val Ser Leu Ser Tyr Glu Glu Ile Ser Lys						
65	70	75	80			
Leu Phe Ser Leu Pro Ile Ala Glu Ala Ala Ser Ile Leu Gly Val Cys						
85	90	95				
Thr Ser Val Leu Lys Arg Ile Cys Arg Thr His Gly Ile Val Arg Trp						
100	105	110				

Pro Tyr Arg Lys Leu Val Ser Gly Lys Ala Gly Asp Asp Thr Lys Gly
115 120 125

Pro Asp Ser Asp Lys Ala Asn Glu Leu Leu Glu Val Ser Lys Ile Ala
130 135 140

Lys Gln Lys Ala Pro Ser Ala Ser Gly Pro Ser Val Val Ser Ser Ser
145 150 155 160

Thr Ser Gln Gly Ala Ala Lys Ser Gln Gln Gly Asn Ser Lys Ala Gly
165 170 175

Gln Phe Ser Val Ser Pro Pro Thr Gly Lys His Asn Ala Ser Leu Ser
180 185 190

Leu Thr His Ser Gln Ala Lys Ala Ile Pro Cys Tyr Met Asp Asp Phe
195 200 205

Lys Tyr Gly Phe Pro Ser Ser Gly Leu Ser Cys Glu Thr Met Lys Trp
210 215 220

Trp Gly Thr Ser Ser Asp Thr Asp Tyr Val Pro Thr Lys Asp Gly Ser
225 230 235 240

His Glu Pro His Glu Ser Thr Thr His Glu Pro Ser Lys Gly Met Thr
245 250 255

Asp Asp Asp Glu Leu Asp Trp Gly Ala Asp Glu Ala Glu Ala Glu Ala
260 265 270

Asp Gly Thr Val Thr Ala Glu Ala Ser Ala Gln Leu Cys Ser Leu Arg
275 280 285

Arg Lys Ala Val Asp Asp Gly Arg Lys Leu Leu Asn Gly His Asn Arg
290 295 300

Arg Gly Gln Glu Phe Ser Arg Leu Asn Lys Arg Gln Lys Thr Ala Leu
305 310 315 320

Ala Gln Val Phe Gly Ala Ser Leu Pro Glu Cys Cys Ile Thr Arg Val
325 330 335

<210> 73
<211> 196
<212> PRT
<213> Zea mays

<400> 73

Glu Ile Asp Pro Ile Thr Lys Glu Val Leu Ala Thr Pro Ile Ala Asp
1 5 10 15

Ala Leu Gly Arg Lys Phe Thr Arg Phe Gly His Gln Ala Lys Glu Asp
20 25 30

Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln Val
 35 40 45
 Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr Leu
 50 55 60
 Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro Arg
 65 70 75 80
 Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro Glu
 85 90 95
 Asp Gly Gln Asp Phe Trp Pro Trp Phe Val Asp His Pro Glu Ile Pro
 100 105 110
 Leu Ile Val Thr Glu Gly Gly Lys Lys Ala Leu Ala Ala Ile Ser Gln
 115 120 125
 Gly Tyr Val Ala Leu Ser Leu Tyr Gly Cys Leu Cys Gly Asn Asp Gly
 130 135 140
 Leu Thr Ile Lys Pro Ser Leu Leu Pro Tyr Val Gln Gly Arg Glu Val
 145 150 155 160
 Ala Ile Ala Tyr Asp Gln Asp Ala Lys Gly Ser Lys Gly Arg Lys Ala
 165 170 175
 Val Phe Lys Gly Thr Lys Arg Leu Ala Arg Asn Leu Thr Tyr His Ala
 180 185 190
 Lys Ala Thr Val
 195

<210> 74
 <211> 151
 <212> PRT
 <213> Zea mays

<400> 74

Pro Arg Val Arg Met Asn Leu Arg Arg Gln Thr Pro Leu Ala Ala Ile
 1 5 10 15
 His Ala Ala Leu Ala Ser Ala Asp Ala Met Val Ala Val His Gly Ala
 20 25 30
 Ala Val Thr His Phe Leu Phe Met Arg Pro Gly Ser Val Leu Leu Gln
 35 40 45
 Val Val Pro Val Gly Leu Asp Trp Ala Ala Asp Ala Phe Tyr Gly Lys
 50 55 60
 Pro Ala Gln Gln Leu Gly Leu Glu Tyr Leu Glu Tyr Lys Val Ala Pro
 65 70 75 80

Glu Glu Ser Ser Leu Ala Ala Glu Tyr Gly Leu Asp Ser Thr Val Leu
85 90 95

Arg Asn Pro Trp Val Ile Ser Ser Arg Gly Trp Trp Glu Met Lys Lys
100 105 110

Val Tyr Met Asp Arg Gln Asn Val Thr Val Asn Ile Lys Arg Phe Gly
115 120 125

Glu Leu Leu Arg Thr Ala Arg Thr His Leu Lys Asn Thr Thr Ala Cys
130 135 140

Ala Ala Ala Ala Ala Leu Arg
145 150

<210> 75
<211> 356
<212> PRT
<213> Zea mays

<400> 75

Thr Arg Pro Ile Glu Pro Gly Ser Arg Pro Glu Thr Ser Asp Tyr Pro
1 5 10 15

Gln Ser Ser Glu Arg Pro Leu Thr Ala Thr Ser Ser Phe Ser Ser Ala
20 25 30

Ser Pro Phe Ser Glu Ser Ser Gln Leu Ala Ser Ser Ser Lys Gln Pro
35 40 45

Ala Pro Tyr Leu Pro Arg Asn His Met Gly Arg Arg Ser Phe Met Ser
50 55 60

Lys Pro Val Tyr Pro Leu Val Phe Arg Asn Pro Val Ser Glu Ser Glu
65 70 75 80

Ala Cys Arg Met Leu Glu Val Gly Asn Ala Gly Arg Ala Thr Pro Ser
85 90 95

Asp Asp Ser Gln Ala Ser Pro Leu Trp Arg Arg Ser Leu Ala Ser Pro
100 105 110

Asp Leu Lys Phe His Asn Ala Pro Asn Glu Leu Gly Lys Met Glu Thr
115 120 125

Ser Pro Glu Pro Asn Thr Ser Ser Arg Arg Glu Gly Phe Arg Trp Ser
130 135 140

Asn Ala Ser Ser Tyr Asp Phe Gly Tyr Asp Gly Asp Ala Ile Asp Ile
145 150 155 160

Ser Asp His Ile Ser Ile Glu Ser Gln Arg Ser Pro Thr Ser Ser Ala
165 170 175

Arg Phe Leu Lys Cys Gly Leu Cys Glu Arg Phe Leu His Gln Lys Ser

180					185					190					
Pro	Trp	Thr	Ser	Asn	Arg	Ile	Val	Arg	Asn	Ala	Asp	Met	Pro	Val	Ala
		195					200					205			
Ala	Val	Leu	Pro	Cys	Arg	His	Val	Phe	His	Ala	Asp	Cys	Leu	Glu	Glu
	210					215					220				
Ser	Thr	Ala	Lys	Thr	Glu	Val	His	Glu	Pro	Pro	Cys	Pro	Leu	Cys	Ala
225					230					235					240
Arg	Ala	Thr	Asp	Asp	Glu	Gly	His	Val	Ser	Phe	Ser	Glu	Pro	Leu	His
				245					250						255
Val	Ala	Leu	Arg	Ser	Ala	Arg	Arg	Asn	Leu	Ser	Leu	Gly	Thr	Gly	Ala
			260					265							
Gly	Gly	Asn	Ser	Gly	Ile	Ser	Asp	Pro	Pro	Arg	Thr	Asp	Arg	Gly	Leu
		275					280					285			
Lys	Arg	Asn	Asn	Ser	Ala	Val	Met	Pro	Arg	Arg	Ser	Gly	Gly	Ala	Leu
	290						295				300				
Phe	Arg	Asn	Arg	Phe	Lys	Lys	Gln	Phe	Pro	Phe	Lys	Ala	Arg	Ile	Gly
305					310					315					320
Lys	Glu	Leu	Phe	Gly	Gly	Arg	Val	Leu	Asn	Lys	Val	Gly	Leu	Ser	Leu
				325					330						335
Ser	Ser	Gly	Gln	His	Asp	Asp	His	Arg	Gln	Gln	Ala	Pro	Lys	His	Asp
			340					345					350		
Arg	Pro	Met	Lys												
			355												

<210> 76
 <211> 940
 <212> PRT
 <213> Zea mays

<400> 76

Met	Ala	Met	Ala	Met	Ala	Arg	Phe	Leu	Ser	Trp	Leu	Phe	Thr	Cys	Phe
1				5					10					15	
Ala	Ala	Leu	Ala	Val	Leu	Glu	Ala	Thr	Val	Pro	Ala	Arg	Ser	Trp	Arg
			20					25					30		
Ala	Pro	Ser	Pro	Thr	Pro	Arg	His	Glu	Ala	Arg	Arg	Phe	Glu	Gln	Lys
		35					40					45			
Thr	Asp	Arg	Phe	Trp	Glu	Tyr	Gln	Glu	Gln	Ser	Asn	Thr	Trp	Val	Gln
	50					55					60				
Val	Arg	Ala	Pro	Phe	Asp	Leu	Met	Ser	Cys	Ile	Asn	Gly	Thr	Cys	Thr
65					70					75					80

Lys Val Gly Ser Ile Gly Arg Leu Ala Arg Glu Pro Gly Arg His Gly
 85 90 95
 Leu Pro Pro Val Gln Ser Gln Glu Glu Glu Glu Asp Thr Arg Arg
 100 105 110
 Val Gln Gly Asp Gly Ala Glu Glu Asp Pro Val Leu Pro Val Arg Arg
 115 120 125
 Arg Ile Ser Leu Thr Arg Met Ser Glu Ser Ser Val Trp Val Thr Gly
 130 135 140
 Gln Ser Gly Ser Ile Tyr Glu Arg Phe Trp Asn Gly Val Val Trp Val
 145 150 155 160
 Ile Ala Pro His Glu Leu Pro Ala Ser Ala Gly Tyr Ala Thr Ala Thr
 165 170 175
 Phe Ile Val Asn Thr Thr Ile Leu Ala Leu Ser Glu Ala Gly Thr Leu
 180 185 190
 Tyr Gln Leu Gln Leu Asn Glu His Ala Gln Pro Ile Trp Thr Glu Met
 195 200 205
 Ala Phe Asn Ser Ser Gln Gln Ser Ala Asn Leu Gly Leu Lys Thr Gln
 210 215 220
 Ser Gln Ala Met Arg Ile Arg Asn Gly Ile Val Ser Asn Asp Gly Arg
 225 230 235 240
 Lys Leu Phe Leu Ser Ile Met Asn Gly Ser Leu Leu Glu Val Thr Glu
 245 250 255
 Ile Gln Pro Leu Arg Trp Asn Tyr His Gly Arg Pro Pro Gly Ala Asp
 260 265 270
 Val Ser Tyr Ile Ser Asp Ala Gly Asn Leu Arg Pro Gly Thr Leu Phe
 275 280 285
 Thr Val Ser Ser Thr Gly Asp Leu Tyr Glu Phe Asp Lys Glu Thr Lys
 290 295 300
 Pro Ser Trp Lys Lys His Ile Trp Ser Glu Glu Leu Ala Lys Asn Ile
 305 310 315 320
 Ser Leu Lys Ser Ser Ala Gly Phe Ala Leu His Gly Leu Ser Gly Ser
 325 330 335
 Asn Ser Val Ser Leu Phe Leu Ile Ser Lys Asp Gly Leu Leu Val Glu
 340 345 350
 Arg Arg Leu His Arg Arg Lys Trp Lys Trp Asp Lys His Gly Ala Pro
 355 360 365
 Thr Gly Gln Arg Leu Ser Ser Ile Ala Glu Val Gln Lys Asp Glu Leu
 370 375 380

Asn	Asp	Ala	Thr	Ser	Met	Phe	Leu	Thr	Thr	Thr	Thr	Gly	Lys	Val	Tyr		
385					390					395					400		
Glu	Tyr	Gln	Phe	Pro	Lys	Tyr	Thr	Gly	Gly	Ala	Gln	Ser	Asn	Lys	Ile		
				405				410						415			
Arg	Gly	Gln	Trp	Ile	Asn	His	Met	Ser	Pro	Glu	His	Ala	Lys	Val	Ala		
			420					425					430				
Arg	Asn	Val	Pro	Gly	Val	His	Val	Gln	Val	Gly	Arg	Met	Val	Phe	Pro		
		435					440					445					
Leu	Asp	Asp	Gly	Arg	Leu	Gly	Glu	Leu	His	Phe	Pro	Gly	Met	Gly	Gly		
	450					455					460						
Thr	Asp	Phe	Gly	Pro	Ser	Ala	Gln	Ser	Thr	Ile	Arg	Arg	Lys	Leu	Ser		
465					470					475					480		
Asn	Lys	Tyr	Glu	Trp	Ser	Ile	Leu	Asp	Ala	Pro	Glu	Thr	Glu	Gly	Trp		
				485					490					495			
Asn	Ala	Glu	Tyr	Cys	Thr	Glu	Glu	His	Gly	Pro	Thr	Asn	Cys	Ile	Ser		
			500					505					510				
Gly	Ala	Lys	Asn	Ile	Ala	Ala	Asp	Thr	Glu	Ser	Asn	Asp	Leu	Ser	Asn		
		515					520				525						
Asn	Pro	Pro	Ser	Arg	Arg	Arg	Lys	Val	Glu	Glu	Lys	Gln	His	Tyr	Leu		
	530					535					540						
Asn	Val	Asn	Arg	Tyr	Gln	Gln	Ser	Asp	Glu	Thr	Glu	Ser	Tyr	Asn	Phe		
545					550					555					560		
Leu	Ser	Arg	Thr	Ile	Asp	Leu	Asn	Phe	His	Met	Arg	Val	Met	His	Ala		
				565					570					575			
Asp	Arg	Ser	Leu	Phe	Leu	Ile	Ala	Asp	Asn	Gly	Leu	Thr	Phe	Glu	Tyr		
			580					585					590				
Leu	Asn	Ser	Asn	Gly	Val	Trp	Leu	Trp	Leu	Arg	His	Glu	His	Val	Thr		
		595					600					605					
Ala	Met	Lys	Gly	Thr	Leu	Gly	Ser	Tyr	Asn	Gly	Ser	Leu	Tyr	Leu	Val		
	610					615					620						
Asp	Val	His	Gly	Asn	Leu	His	Ile	Arg	Glu	Arg	Asn	Gly	Asp	Glu	Leu		
625					630					635					640		
Leu	Trp	Ile	Asn	Cys	Thr	Ala	Met	Lys	Lys	Gly	Arg	Gln	Val	Ala	Ser		
				645					650					655			
Gly	Ser	Pro	Trp	Asp	Gly	Ile	Pro	Gly	Leu	Leu	Arg	Arg	Val	Thr	Thr		
			660					665					670				
Asp	Asp	Ala	Leu	Phe	Phe	Val	Asn	Lys	Arg	Gly	Arg	Leu	Leu	Gln	Phe		
		675					680					685					

Thr Val Ala Leu Arg Lys Phe Lys Trp Lys Asp Cys His Ser Pro Pro
 690 695 700
 Asp Thr Lys Ile Ala Phe Ile Val Asp Gln Glu Val Phe Arg Arg Asn
 705 710 715 720
 Ile Ile Phe Val Val Gly Arg Asn Gly Arg Leu Tyr Gln Tyr Asn Arg
 725 730 735
 Ile Thr Glu Leu Trp His Arg His Tyr Gln Ser Pro His Leu Phe Leu
 740 745 750
 Ser Cys Ser Pro Gly Thr Ala Met Arg Pro Ser Pro Leu Ser Leu Ala
 755 760 765
 Gly Ser Leu Phe Met Val Ser Glu His Gly Gly Leu Val Glu Tyr His
 770 775 780
 Phe Ser Pro Gln Asp Gly Trp Glu Trp Val Glu His Gly Thr Pro His
 785 790 795 800
 Arg Gly Val Thr Leu Val Gly Ala Pro Gly Pro Cys Phe Asp Gly Ser
 805 810 815
 Gln Leu Phe Val Val Gly Ser Asp Gly His Val Tyr Arg Arg His Met
 820 825 830
 Glu Gly Arg Thr Trp Arg Trp Thr Ser His Gly His Pro Pro Ser Glu
 835 840 845
 Pro Ala Ala Val Asp Glu Gln Ser Cys Ala Thr Pro Asp Thr Gly Ala
 850 855 860
 Gly Ala His Tyr Ala Asp Gly Phe Arg Gly Ser Cys Asp Gly Lys Val
 865 870 875 880
 Ala Ala Val Arg Pro Val Pro Phe Ser Glu Asp Ala Val Val Phe Glu
 885 890 895
 Leu Arg Asp Gly Arg Leu Ala Glu Leu Arg Arg Pro Pro Ser Ala Asp
 900 905 910
 Gly Cys Gly Gly Trp Glu Trp Ala Arg Ile Ile Gly Thr Pro Ala Ser
 915 920 925
 Ala Cys Met Thr Ser Tyr Trp Thr Ala Val Ala Thr
 930 935 940

<210> 77
 <211> 556
 <212> PRT
 <213> Zea mays
 <400> 77

His	Ala	Ser	Gly	Thr	Met	Glu	Ile	Gly	Leu	Arg	Gly	Pro	Thr	Asn	Leu	1	5	10	15
Phe	Gly	His	Pro	Thr	Asp	Lys	Gln	Met	Ile	Glu	Leu	Asp	Gln	Ala	Leu	20	25	30	
Ser	Gln	Trp	Asn	Thr	Asp	Phe	Asp	Lys	Val	Pro	Val	Thr	Lys	Ile	Ala	35	40	45	
Phe	Gly	His	Phe	Pro	Leu	Ser	Phe	Ser	Ala	Leu	Thr	Glu	Ser	Gly	Lys	50	55	60	
Ser	Ile	Lys	Asp	Val	Phe	Leu	Lys	Gln	Ser	Leu	Ala	Ala	Tyr	Leu	Cys	65	70	75	80
Gly	His	Leu	His	Thr	Arg	Phe	Gly	Lys	Asn	Leu	Lys	Arg	Tyr	Tyr	His	85	90	95	
Arg	Ala	Val	Gln	Glu	Ser	Ser	Leu	Ser	Glu	His	Tyr	Tyr	Gln	His	Asn	100	105	110	
Met	His	Gln	Gly	Asp	Ala	Phe	Gln	Gly	Asn	Lys	Glu	Asn	Cys	Ser	Glu	115	120	125	
Glu	Ala	Ser	His	Ile	Glu	Glu	Phe	Trp	Glu	Trp	Glu	Met	Gly	Asp	Trp	130	135	140	
Arg	Lys	Ser	Arg	Ser	Met	Arg	Ile	Leu	Ala	Ile	Asp	Asp	Gly	Tyr	Val	145	150	155	160
Ser	Tyr	Thr	Asp	Ile	Asp	Phe	Arg	Leu	Gly	Ser	Lys	Ser	Ile	Ile	Ile	165	170	175	
Leu	Pro	Thr	Phe	Pro	Leu	Asp	Ser	Arg	Phe	Met	Gln	Arg	Ala	Ser	Ala	180	185	190	
Phe	Arg	Asp	Phe	Lys	Cys	His	Val	Met	Gly	Ala	Ser	Ser	Phe	Asp	Thr	195	200	205	
Val	Arg	Ala	Leu	Val	Phe	Ser	Lys	His	Glu	Ile	Ile	Ser	Val	Ser	Val	210	215	220	
Lys	Ile	Tyr	Asp	Ser	Arg	Pro	Gly	Thr	Leu	Glu	Ile	Val	Phe	Asp	Ser	225	230	235	240
Glu	Met	Lys	Arg	Val	Asp	Ser	Asn	Glu	Thr	Arg	Gly	Asn	Met	Tyr	Leu	245	250	255	
Ile	Pro	Trp	Asn	Trp	Arg	Ala	Phe	Glu	Asp	Ser	Ser	Pro	Ser	Arg	Tyr	260	265	270	
Trp	Leu	Gln	Ile	Glu	Val	Met	Asp	Ile	Thr	Gly	Asp	Thr	Ser	Val	Ser	275	280	285	
Gln	Leu	Arg	Pro	Phe	Ser	Val	Asn	Gly	Leu	Pro	Ala	Arg	Val	Asn	Trp	290	295	300	

Thr	Trp	Lys	Glu	Phe	Phe	Val	Ile	Gly	Ile	Gln	Trp	Ala	Ser	Ile	Tyr		
305					310					315					320		
His	Pro	Ala	Leu	Trp	Cys	Ala	Phe	Ser	Leu	Ile	Phe	Ser	Leu	Leu	Leu		
				325					330					335			
Val	Pro	Gln	Val	Leu	Ala	Val	Val	Phe	Lys	Asp	Arg	Phe	Thr	Tyr	Lys		
			340					345					350				
Ser	Leu	Cys	Ala	Tyr	Gly	Gly	Gln	Arg	Thr	Leu	Leu	Lys	Ser	Leu	Val		
		355					360					365					
Gly	Gly	Phe	Ile	Cys	Cys	Phe	Val	Glu	Leu	Ser	Arg	Leu	Val	Leu	Val		
	370					375					380						
Trp	Leu	Leu	Leu	Leu	Leu	Tyr	Ala	Ile	Tyr	Leu	Val	Phe	Ile	Pro	Trp		
385					390					395					400		
Leu	Phe	Gly	His	Pro	Ile	Thr	Glu	Asp	Gly	Ser	Leu	Thr	Tyr	Met	Thr		
			405						410					415			
His	Lys	Gly	Trp	Ile	Leu	Lys	Gly	Pro	Ser	Ser	Ser	Asn	Glu	Val	Val		
			420					425					430				
His	Ala	Gly	Ile	Pro	Asp	Val	Met	Val	Ile	Val	Leu	Pro	His	Leu	Cys		
		435					440					445					
Phe	Val	Leu	Val	Pro	Thr	Ile	Val	Ile	Leu	Ala	Ala	Met	Ala	Ala	Glu		
	450					455					460						
Arg	Thr	Ala	Tyr	Arg	Glu	His	Tyr	Leu	Ser	Arg	Ser	Gly	Lys	Lys	Lys		
465					470					475					480		
Asp	Asp	Tyr	Arg	Lys	Ser	Arg	Thr	Gln	Ile	Glu	His	Glu	Asn	Phe	Trp		
			485						490					495			
Asn	Gly	Arg	Trp	Ile	Ser	Lys	Phe	Leu	Cys	Leu	Leu	Cys	Val	Val	Val		
			500					505					510				
Leu	Cys	Lys	His	Trp	Lys	Leu	Cys	Arg	Ala	Leu	Val	Lys	Ala	Tyr	Ala		
		515					520					525					
Met	Asn	Pro	Leu	Leu	His	Ala	Pro	Val	Leu	Phe	Phe	Phe	Val	Pro	Leu		
	530					535					540						
Leu	Met	Val	Phe	Ala	Ile	Tyr	Lys	Thr	Arg	Ser	Ile						
545					550					555							

<210> 78
 <211> 167
 <212> PRT
 <213> Zea mays

 <400> 78

Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp Phe

1	5	10	15
Ser Glu Gly Ser Arg Ala Ala Leu Arg Trp Ala Ala Ala Asn Leu Leu	20	25	30
Arg Ala Gly Asp His Leu Leu Leu Leu His Val Ile Lys Glu Pro Asp	35	40	45
Tyr Glu Gln Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro Leu	50	55	60
Ile Pro Leu Ser Glu Phe Ser Asp Pro Ile Ile Ala Lys Lys Tyr Gly	65	70	75
Ala Lys Pro Asp Ile Glu Thr Leu Asp Ile Leu Asn Thr Thr Ala Thr	85	90	95
Gln Lys Asp Ile Val Val Val Val Lys Val Leu Trp Gly Asp Pro Arg	100	105	110
Glu Lys Leu Cys Gln Val Ile His Asp Thr Pro Leu Ser Cys Leu Val	115	120	125
Ile Gly Ser Arg Gly Leu Gly Lys Leu Lys Arg Val Leu Leu Gly Ser	130	135	140
Val Ser Asp Tyr Val Val Asn Asn Ala Thr Cys Pro Val Thr Val Val	145	150	155
Lys Ser Thr Ser Thr Glu Gly	165		

<210> 79
 <211> 81
 <212> PRT
 <213> Zea mays

<400> 79

Gln Thr Arg Ala Tyr Leu Ser Asn Val Cys Val Ala Lys Glu Leu Gln	1	5	10	15
Lys Lys Gly Leu Gly Tyr Thr Leu Val Asp Lys Ser Lys Lys Leu Ala	20	25	30	
Leu Glu Trp Gly Ile Thr Asp Leu Tyr Val His Val Ala Ile Asn Asn	35	40	45	
Val Ala Gly Gln Lys Leu Tyr Lys Lys Cys Gly Phe Val Tyr Glu Gly	50	55	60	
Glu Glu Pro Ala Trp Lys Gly Arg Phe Leu Gly Arg Pro Arg Arg Leu	65	70	75	80

Leu

<210> 80
 <211> 291
 <212> PRT
 <213> Zea mays

<400> 80

Met Asn Gly Gly Leu Pro Gly Phe His Asn Ala Pro Ala Ser Lys Ala
 1 5 10 15

Val Val Val Ala Ala Gly Leu Phe Ser Val Ala Phe Gly Phe Arg Gly
 20 25 30

His Ser Leu Asn Leu Gly Leu Ala Tyr Gln Ser Val Tyr Glu Lys Leu
 35 40 45

Ser Val Trp Arg Leu Ile Thr Ser Phe Phe Ala Phe Ser Ser Thr Pro
 50 55 60

Glu Leu Ile Phe Gly Ala Val Leu Leu Tyr Tyr Phe Arg Val Phe Glu
 65 70 75 80

Arg Gln Ile Gly Ser Asn Lys Tyr Ala Val Phe Ile Ile Phe Ser Thr
 85 90 95

Met Val Ser Val Leu Leu Gln Ile Leu Ala Leu Gly Tyr Met Lys Asp
 100 105 110

Pro Ser Leu Asn Pro Leu Thr Ser Gly Pro Tyr Gly Leu Ile Phe Ala
 115 120 125

Ser Tyr Val Pro Phe Phe Phe Asp Ile Pro Ile Ser Met Lys Phe Arg
 130 135 140

Ile Phe Gly Leu Ser Phe Ser Asp Lys Ser Phe Val Tyr Leu Ala Gly
 145 150 155 160

Leu Gln Leu Leu Phe Ser Ser Gly Arg Arg Ser Ile Val Pro Gly Leu
 165 170 175

Ser Gly Ile Leu Ala Gly Leu Leu Tyr Arg Leu Asn Thr Phe Gly Val
 180 185 190

Arg Arg Leu Lys Phe Pro Glu Phe Ala Thr Ser Leu Phe Ser Gln Leu
 195 200 205

Ser Leu Pro Phe Ser Ser Asn Pro Tyr Gln Gly Leu Pro Ile Thr Glu
 210 215 220

Asn Asp Gly Ser Ile Pro Ser His Gln Ala Arg Gln Ile Glu Asp Ala
 225 230 235 240

Arg Thr Ala Thr Gln Asp Pro Thr Glu Ser Ser Ile Ala Ala Leu Val
 245 250 255

Ser Met Gly Phe Asp Arg Ser Ala Ala Ile Gln Ala Leu Ala Leu Thr

	260		265		270
Asn Tyr Asp Val Asn Leu Ala Ser Asn Ile Leu Leu Glu Ala Gln Ala					
	275		280		285
Leu Gln Gln					
	290				
<210>	81				
<211>	294				
<212>	PRT				
<213>	Glycine max				
<400>	81				
Met Asp Ser Ser Cys Val Pro Asn Gly Asp Val Ser Gly Phe Lys Asp					
1	5		10		15
Lys Glu Pro Met Val Asp Pro Phe Leu Val Glu Ala Leu Gln Asn Pro					
	20		25		30
Arg His Arg Val Thr Ile Leu Arg Met Glu Leu Asp Ile Gln Arg Phe					
	35		40		45
Leu Asn Asn Ala Asp Gln Gln His Phe Glu Phe Gln His Phe Pro Ser					
	50		55		60
Ser Tyr Leu Arg Leu Ala Ala His Arg Val Ala Gln His Tyr Gly Met					
65	70		75		80
Gln Thr Met Val Gln Asp Asn Gly Phe Asn Gly Gln Gly Thr Arg Ile					
	85		90		95
Met Val Arg Lys Ile Ala Glu Ser Arg Tyr Pro Val Val Cys Leu Ser					
	100		105		110
Glu Ile Pro Ala Lys Gln Leu Glu Asp Asp Lys Pro Glu Gln Ile Lys					
	115		120		125
Ile Ala Ile Arg Pro Arg Gln Asn Lys Asn Ser Leu Asn Glu Ala Gly					
	130		135		140
Arg Lys Ser Asn Pro Leu Arg Ser Val Glu Glu Arg Lys Glu Glu Tyr					
145	150		155		160
Asp Arg Ala Arg Ala Arg Ile Phe Ser Ser Ser Arg Ser Cys Asp Ser					
	165		170		175
Asp Asp Thr Leu Ser Gln Thr Phe Thr Asp Glu Lys Asn Ser Leu Ile					
	180		185		190
Ile Lys Asp Glu Asn Glu Thr Ser Lys Thr Pro Val Val Asp Ser Glu					
	195		200		205
Gln Cys Thr Val Gly Arg Asp Ile Ser Ser Thr Arg Val Ala Ile Leu					
	210		215		220

Arg Asp Arg Glu Lys Asp Arg Ser Asp Pro Asp Tyr Asp Arg Asn Tyr
 225 230 235 240

Gly Arg Tyr Ala Arg Ser Ile Pro Ile Ser Ser Leu Asn Leu Met Pro
 245 250 255

Phe Asn Leu Gln Gln Val Gln Pro Pro Phe Val Gln Tyr Asp Asn Ala
 260 265 270

Leu Ile Arg Ser Val Arg Tyr His Lys Ile Lys Leu His Leu Ala Met
 275 280 285

Asp Leu Leu Gln Ala Leu
 290

<210> 82
 <211> 238
 <212> PRT
 <213> Zea mays

<400> 82

Ala Arg Gly Ser Ala His Tyr Arg Thr Phe Trp Val Thr Asp Ser His
 1 5 10 15

Tyr Leu Thr Ala Thr Gly Pro Ala Ile Ala Ile Phe Thr Asn Pro Thr
 20 25 30

Lys Gln Gly Tyr Asp Asp Gly Leu Gly Glu Lys Ile Ile Gly Thr Phe
 35 40 45

Gly Asn Cys Ala Gly Gly Thr Thr Pro Trp Gly Thr Val Leu Ser Ala
 50 55 60

Glu Glu Asn Phe Gln Ser Gln Val Pro Glu Ala Val Tyr Ala Asp Gly
 65 70 75 80

Ser Ala Val Asp Pro Ala Gln Cys Pro Leu Lys Ile Ser Thr Asn Gly
 85 90 95

Leu Ser Gly Gln Gly Asn Val Phe Gly Leu Ala Gly Asn Lys Tyr Gly
 100 105 110

Trp Met Val Glu Ile Asp Pro Ala Asn Ala Asn Asp Tyr Gly Val Lys
 115 120 125

His Thr Ala Leu Gly Arg Phe Arg His Glu Ala Val Ala Val Arg Ala
 130 135 140

Thr Ala Asn Gln Pro Leu Ala Val Tyr Ser Gly Cys Asp Arg Thr Ser
 145 150 155 160

Gly His Leu Tyr Lys Phe Val Ser Ala Asp Thr Val Lys Ser Pro Thr
 165 170 175

Asp Lys Gly Asn Ser Arg Leu Phe Thr Ala Gly Thr Leu Tyr Gly Ala
180 185 190

Lys Phe Asn Ala Asp Gly Thr Gly Glu Trp Ile Ala Leu Thr Pro Asp
195 200 205

Thr Val Val Asn Pro Val Arg Pro Ser Asp Ile Ala Val Asp Ser Ser
210 215 220

Thr Thr Gly Ile Val Tyr Leu Pro His Pro Asp Arg Asn Gln
225 230 235

<210> 83
<211> 322
<212> PRT
<213> Zea mays

<400> 83

Pro Arg Val Arg Val Pro Leu His Arg Met Ser Asp Pro Ala Ala Gly
1 5 10 15

Gly Ala Met Val Pro Ala Ala Gly Arg Gly Ile Ala Trp Ala Asn Gly
20 25 30

Gly Pro Arg Phe Gly Asp Met Val Trp Ala Lys Val Lys Ser His Pro
35 40 45

Trp Trp Pro Gly His Ile Tyr Ser Val Ser Leu Thr Asp Asp Glu Glu
50 55 60

Val His Arg Gly His Arg Asp Gly Leu Val Leu Val Ala Phe Phe Gly
65 70 75 80

Asp Ser Ser Tyr Gly Trp Phe Asp Pro Ser Glu Leu Val Pro Phe Glu
85 90 95

Asp His Phe Thr Glu Lys Ala Ala Gln Gly Gly Ser Ser Arg Ser Ser
100 105 110

Phe Ala Ala Ala Val Ala Glu Ala Val Asp Glu Val Ala Arg Arg Ser
115 120 125

Ala Leu Ala Leu Leu Cys Pro Cys Asp Ile Pro Asp Ala Phe Arg Pro
130 135 140

His Pro Ser Asp Gly Asn Phe Phe Leu Val Asp Val Pro Ala Phe Asp
145 150 155 160

Thr Asp Ala Asp Tyr Gln Leu Asp Gln Ile Arg Ala Ala Arg Gln Arg
165 170 175

Phe Val Pro Arg Lys Ala Leu Asn Tyr Leu Leu Asp Ala Ala Val Thr
180 185 190

Gln Arg Asp Ala Ala Glu Lys Ala Ala Arg Thr Val Pro Gly Met Glu

195					200					205					
Met	Ala	Ala	Leu	Phe	Leu	Ala	Tyr	Arg	Arg	Ala	Val	Phe	Ser	Pro	Ile
210					215					220					
Asp	Asn	Thr	Tyr	Ala	Gln	Ala	Phe	Gly	Val	Asp	Pro	Glu	Leu	Ala	Leu
225					230					235					240
Ala	Ala	Glu	Gln	Lys	Ala	Ala	Ala	Glu	Arg	Ala	Gln	Arg	Gly	Ile	Asn
				245					250					255	
Asn	Thr	His	Met	Leu	Asn	Ser	Ser	Cys	Thr	Val	Val	Leu	Val	Thr	Val
			260					265					270		
Tyr	Leu	Lys	Leu	Met	Gly	Lys	Gln	Cys	Ser	Tyr	Cys	Phe	Tyr	Arg	Ser
		275					280					285			
Ser	Asn	Asn	Tyr	Phe	Asp	Val	Asn	Asn	Gly	Val	Asp	Leu	Ile	Gln	Ile
	290					295					300				
Val	Ser	Ile	Ser	Leu	Leu	Phe	Asn	Cys	Trp	Leu	His	Phe	Phe	Tyr	Gln
305					310					315					320

Arg Glu

<210> 84
 <211> 187
 <212> PRT
 <213> Zea mays

<400> 84

His	Ala	Ser	Glu	Ala	Ser	Ala	Ala	His	Leu	Thr	Asn	Tyr	Gly	Asn	Met
1				5					10					15	
Val	Ser	Ala	Gln	Glu	Arg	Ser	Ile	Gln	His	Thr	Ala	Tyr	Asn	Pro	Glu
			20					25					30		
Val	Thr	Leu	Asn	Leu	Pro	Pro	Pro	Pro	Pro	Leu	Pro	Thr	Ile	Pro	His
		35					40					45			
Ser	Ser	Ala	Thr	Leu	Gln	Ser	Gln	Gly	Gly	His	Ser	Leu	Pro	Ser	Gln
	50					55					60				
Thr	Asn	Gln	Gln	Leu	Tyr	Gln	Pro	Glu	Gln	Tyr	Tyr	Val	Pro	Gln	Asn
65					70					75					80
Asn	Tyr	Gly	Pro	Leu	Val	Pro	Val	Ser	His	Ser	Asn	Leu	Gln	Ile	Ser
			85					90						95	
Asn	Thr	Asn	Asn	Pro	Thr	Leu	Thr	Ile	Pro	Gln	Val	Asn	Pro	Gly	Pro
			100					105					110		
Pro	Thr	Asn	Asn	Gln	Ile	Gly	Asn	Leu	Ala	Gln	Pro	Gln	His	Ser	Met
			115				120					125			

Pro Leu His Val Asp Arg Ala Ser Gln Asp Phe Ser Ser Gln Gly Gln
130 135 140

Gln Gln Asn Arg Gly Pro Gly Ala Ala Gln Ala Pro Glu Glu Asp Lys
145 150 155 160

Ser Lys Lys Tyr Gln Ala Thr Leu Gln Leu Ala Gln Asn Leu Leu Leu
165 170 175

Gln Leu Gln Gln Arg Gly Ser Gly Asn Gln Ser
180 185

<210> 85
<211> 258
<212> PRT
<213> Zea mays

<400> 85

His Ala Ser Asp Pro Thr Glu Phe Ile Leu Glu Thr Leu Glu Gln Ser
1 5 10 15

Asp Pro Gln Ser Leu Ile Gln Tyr Leu Ala Tyr Gln Asp Leu Cys Val
20 25 30

Val Ser Glu Cys Asn Leu Glu Pro Trp Arg Arg Ala Ala Phe Phe Glu
35 40 45

Glu Ser Gly Glu Thr Tyr Arg Arg Ile Val Thr Ala Cys Leu Lys Pro
50 55 60

Leu Glu Glu Phe Thr Ser Lys Ile Ala Glu Ala Leu Glu Gly Phe Ser
65 70 75 80

Ser Asp Gln Pro Glu Leu Met Leu Gln Gln Ser Arg Leu Phe Ser Ala
85 90 95

Phe Asp Asp Ser Gln Ile Cys Thr Trp Cys Ala Arg Thr Leu Ala Gly
100 105 110

Leu Thr Ala Arg Ser Arg Lys Glu Asp Arg Tyr Gly Val Ala Gln Leu
115 120 125

Thr Gly Cys Asn Ala Ala Val Met Thr Thr Leu Leu Ser Ala Leu Val
130 135 140

Ala Ile Glu Thr Cys Leu Gly Lys Lys Thr Asn Pro Gln Pro Val Arg
145 150 155 160

Ser Leu Gly Pro Glu Asn Ile Arg Trp Thr Asn Leu Ser Thr Gly Arg
165 170 175

Lys Gly Asn Gly Val Ala Ile Ala Ser Thr Gln Lys Ser Gly Leu His
180 185 190

Lys Lys Ala Tyr Ile Met Ala Asp Val Leu Arg Thr Ser Val Tyr His

195	200	205
Ile Leu Ser Ala Phe Ile Asp Asp Leu Gln Ala Asn Ala Lys Pro Ser		
210	215	220
Ser Leu Glu Lys Asn Trp Ile Ser Glu Gly Arg Lys Pro Val Tyr Gly		
225	230	235 240
Ser Gln Ala Val Leu Val Gln Lys Leu Ile Leu Phe Ile Glu Tyr Arg		
	245	250 255

Ala Val

<210> 86
 <211> 288
 <212> PRT
 <213> Zea mays

<400> 86

Gly Leu Glu Glu Glu Asp Gly Glu Glu Ala Ala Pro Ala Ser Pro Trp	
1 5 10 15	
Ala Glu Ala Asp Ala Gln Ala Gly Gly Ala Glu Ala Gln Thr Glu Val	
20 25 30	
Leu Gly Ala Gly Glu Pro Asp Leu Glu Ser Lys Ile Val Ala Ile Arg	
35 40 45	
Asp Phe Leu Glu Asp Pro Asn Gln Pro Glu Asn Glu Leu Val Ser Leu	
50 55 60	
Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu	
65 70 75 80	
Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala	
85 90 95	
Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile	
100 105 110	
Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala	
115 120 125	
Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser	
130 135 140	
His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln	
145 150 155 160	
Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser	
165 170 175	
Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn	
180 185 190	

